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USAID COMMUNICATE FOR HEALTH

ASSESSING COMMUNICATION MESSAGES, BEHAVIOR
DETERMINANTS AND BEHAVIORS AMONG TARGET
AUDIENCES IN GHANA

FOLLOW-UP SURVEY REPORT

September 2018



USAID COMMUNICATE FOR HEALTH

Mobile Cohort Study - Follow-up Survey 2018

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ACRONYMS

AMEP	Activity Monitoring and Evaluation Plan
C4H	Communicate for Health
CU5	Child under age 5 (years)
DHS	Demographic and Health Survey
FHI 360	Family Health International
GHS/FHD	Ghana Health Service/Family Health Division
GHS/HPD	Ghana Health Service/Health Promotion Department
GLLIW	Good Life Live it Well
IPC	Interpersonal Communication
ITN	Insecticide Treated Net (bed net)
IVR	Interactive Voice Response
M&E	Monitoring and Evaluation
PW	Pregnant Women
P/PW	Partner of Pregnant Woman
RDD	Random Digit Dial
SBCC	Social and Behavior Change Communication
SEM	Social Ecological Model
USAID	United States Agency for International Development
WASH	Water, Sanitation and Hygiene
YYA	Youth-Young Adult

EXECUTIVE SUMMARY

A primary goal of the USAID Communicate for Health (C4H) project is to improve the overall health of Ghanaians through the increased adoption of healthy behaviors in 5 key areas: family planning, WASH (water, sanitation and hygiene), nutrition, maternal and child health (MNCH), and malaria prevention. The Mobile Cohort follow up survey - 2018 is the second stage of a multi-year study that monitors and evaluates trends in self-reported healthy behaviors in these topic areas among the five USAID target regions in Ghana. The baseline survey was conducted in February and March 2017 and serves as the reference point for the follow-up survey that was conducted 9 months later.

The project will conduct a second cross-sectional study that generates a new sample using Random Digital Dial on mobile phones in Year 5 of the project; this will allow comparison across USAID Communicate for Health project Year 3 and Year 5. These data collection efforts will help determine the scope and reach of current health communications campaigns and programming and assess the programming at periodic junctures.

This survey was conducted using Interactive Voice Responses (IVR) technology whereby pre-recorded content in multiple local languages prompts users to listen to questions and press buttons on their phone to respond. Precisely 2250 numbers were dialed at follow-up, leading to meaningful contact with 707 respondents. These respondents met the demographic criteria for inclusion in Life Stage groups during the baseline survey - (Youth-Young Adults ages 18-35, Caregivers of Children Under Five [CU5] and Pregnant Couples). At follow-up, respondents completed an extended set of questions on Social and Behavior Change Communication (SBCC) indicators, access to media channels, and exposure to health messages and health behaviour.

Due to some attrition from baseline to follow-up, and relatively small samples for several Life Stage audience segments, in this report we are only able to assess trends in data from baseline to follow up. These trends should be viewed as suggestive of what might have occurred across the targeted focal regions, as it is not appropriate to test the statistical significance of potential changes within the cohort. Results should be viewed with caution, especially for the small samples of pregnant women and female caretakers of children under 5 at follow-up.

Exposure to communication messages on various health topics is one of the key indicators being measured by the study. The USAID Communicate for Health initiative's target for message recall is **70%** for each health topic for the fiscal year 2018.

Exposure to health communication messages

The data suggest that across the board, exposure to the USAID Communicate for Health programming and health communication messages showed marked improvements exceeding project targets in most topic areas.

- There is a suggestive increase in the awareness of the *GoodLife, Live it Well* brand from 61% at baseline to 71% at follow up, surpassing the project target of 71%.
- It appears that more respondents were exposed to family planning messages at follow-up (72%) than at baseline (58%).

- For sexually active youth, the data suggested an increase in exposure to messages on condoms from baseline (69%) to follow up (74%).
- For facility delivery messages, the data showed a trend of increased exposure from baseline (60%) to follow up (73%)
- For WASH messages, there was a suggestive increase for exposure to any handwashing message from 65% to 79%
- Exposure to messages on ITN/Malaria and exclusive breastfeeding appeared to remain static.
- There may have been a decrease in exposure to messages on complementary feeding from 81% at baseline to 76% at follow up.

Interpersonal Communication

Across most thematic areas, Interpersonal Communication showed marked increases from the baseline to the follow up survey.

- Interpersonal communication on delaying pregnancy for sexually active participants suggests an increase from 50% at baseline to 58% at follow up with marked increases in the Mw/CU5 life stage (+31%)
- Interpersonal communication on delaying pregnancy for sexually inactive participants show suggestive increase from participants from 36% at baseline to 44% at follow up
- ITN use shows an increase by +23 percentage points from 46% at baseline to 59% at follow up
- Interpersonal communication on condom use remained static at 41%
- For Handwashing, Interpersonal Communication showed a trend of increasing, albeit slightly from baseline (62%) to follow-up (67%). Pregnant women and Young female adult reported interpersonal communication above 75%.
- Interpersonal communication on facility-based birth appears to increase from 47% at baseline to 67% at follow up

Intended Behaviour

- Trends in intentions to delay pregnancy suggested an overall increase from 71% at baseline to 74% at follow up.
- Intention to delay pregnancy amongst sexually inactive young adults and caregivers of children under 5 overall appeared to remain the same over time at 48%
- For Caretakers of children under 5, there was a marginal decrease from baseline to follow-up for intention for all children under 5 to sleep under a net the next night from 67% to 63%.
- The data suggested a very slight decrease in intentions to use condom overall - from 28% to 26%
- Intention to give birth at a health facility appears to be very high at 93% with a marginal increase from baseline.
- Intention to use soap and water to wash hands in the next three months showed a trend of increasing from 61% at baseline to 73% at follow-up

Reported Behaviour

Key behavioural insights gained from the follow up data on Life Stage groups are as follows:

- For family planning, all but one cohort reported improvements in doing something to prevent or delay pregnancy. Overall, reported behaviour remains constant from baseline to follow up (53%)
- Trends in the results suggest there was no change in the proportion of sexually active youth who reported using condoms from baseline to follow up (17%).
- Three out of four cohorts (except Fw/CU5) showed improvements in reported behaviour to give birth at a health facility. As expected, the data suggests that behavior for facility delivery remains high albeit, static at 88%.
- For ITN use, the data suggested a small net increase from 61% to 64% from baseline to follow up, for Caregivers who reported their children under 5 slept under a bed net the previous night. This was however more apparent in the Mw/CU5 with an increase of +7 percentage points.
- Handwashing behavior, remained same at 32% from baseline to follow up with marked improvements in the Mw/CU5 and F 18 – 35 cohorts. Availability of handwashing places on the other hand suggests an increase from 44% to 51%.

From the data, it is also apparent that there are marked improvements in exposure to messages and behavioural determinants (intended behaviour and Interpersonal communication). Reported behaviour, on the other hand compares less favourably. In the short term, this aligns with expectations as huge improvements are not expected in reported behaviours but more so in behavioural determinants.

Some factors that may account for this are as follows:

1. *The USAID Communicate for Health project focuses on creating demand for health behaviours and services through its SBCC campaigns and it is not directly responsible for supply factors such as availability of trained personnel, equipment, infrastructure and product.*
 2. *Increasing exposure and awareness to health messages through mass media is the first step to improving knowledge, interpersonal communication, intention and adoption of behaviours*
- Modern beliefs on gender responsibilities for child care may have increased marginally from 66% at baseline to 68% at follow up. Notably, improvements from baseline to follow-up were seen in all Life Stage audience segments except one (Male caregivers with children under 5). While small, evidence of a potential improvement in gender norms is important and encouraging because of the difficulty of changing norms and the association between improved gender norms and better health and development outcomes.
 - Gender responsibilities for avoiding pregnancy appears to remain same at 73% over the period with particularly improved figures for the pregnant women cohorts from 50% at baseline to 67% at follow up.

For the final survey in the series, it is expected that exposure, behavioural determinants and ultimately reported behaviour will improve considerably as more time would have elapsed for behaviour change to occur. This will also be facilitated because of applied learnings from this survey, with the necessary iterations to programming and implementation. To reiterate, reported behaviour change in future surveys may be dependent on improvements to social mobilization, access and quality of healthcare.

Response Rates

Overall, the response rate was 31.4%. The more elusive demographic profiles, Pregnant Couples and Caregivers of Children under age 5, evidenced higher attrition rates than youth and young adults. For example, these Life Stages contributed only 91 and 135 participants respectively into the follow up study sample of 707; the remaining 481 follow-up participants were youth and young adults 18-35 years of age.

Costs

The IVR survey is less expensive and faster than a face to face household survey. For each respondent reached in the USAID Communicate for Health survey, it cost an estimated \$9 to reach a respondent at follow-up and \$22 for a complete response, whilst [add source] a complete response for a single wave of data collection from a house to house survey costs upwards of \$30. This price point presents a good avenue to reduce costs associated with Monitoring and Evaluation. The innovative approach of this survey has the potential to transform the M&E sphere in Ghana and Africa.

BACKGROUND

Over the last two decades although, Ghana has made remarkable progress in increasing access to health services through the Community Based Health Planning and Services (CHPS) program and implementation of the National Health Insurance Scheme, Free Maternal Health policy amongst others. challenges remain particularly in-service delivery and health communication. Key challenges included the lack of collaboration and coordination in health promotion. Most health promotion activities were uncoordinated and occur within donor-funded projects (about 98%) to address specific health areas or diseases e.g. malaria, resulting in issues that are not tied to a unified national strategy¹. Traditional vertical-disease focused communication campaigns promote isolated health activities rather than integrating them. The Health Promotion Department (HPD), part of the ever-evolving Ghana Health Service (GHS), though committed to changing the paradigm, was poorly positioned and understaffed thus in need of support and capacity building. The National Health Promotion Policy and National Strategy and Action Plan for Health Promotion the platform from which this critical service could transition into an effective and embedded function that helps to usher in a new era of health care partnership and enable Ghanaians to optimize their own chances for better health remained a draft. Significant gaps in M&E and knowledge management contributed to a limited capacity to collect and analyze health promotion related data, especially at the district and community levels for improved programming and decision making.² The Government of Ghana keenly aware that the best management of these health issues and diseases was a strong and effective health system that includes high quality, well-coordinated health communication with USAID launched the Communicate for Health project in November 2014.

The five-year cooperative agreement awarded to FHI 360 (prime) and its consortium of partners, the Creative Storm Networks, the Ghana Community Radio Networks and Viamo formerly VOTO mobile seeks to improve the health and well-being of Ghanaians through a broad range of “above the line” mass media communication campaigns and capacity building for the Health Promotion Department and a local SBCC organization to be potential direct recipients of USAID funding. The project supports the GHS to increase demand for and use of key health services through sustained evidence-based social and behavior change communication (SBCC) and adoption of positive health behaviors across family planning (FP); maternal, newborn, and child health (MNCH); nutrition; water, sanitation, and hygiene (WASH); malaria prevention and case management; and HIV/AIDS. The project targets four demographic Life Stage audiences comprised of 1) Youth ages 15-17; 2) Young adults in relationships ages 18-35; 3) Pregnant couples; and 4) Caregivers of children under five years. The Life Stages approach originated in consumer studies and helps to identify and address evolving health needs over various stages of an individual’s life.

The project has three key results areas as follows:

- Improve behavior change in FP, MNCH, WASH, nutrition, malaria prevention and case management and HIV/AIDS

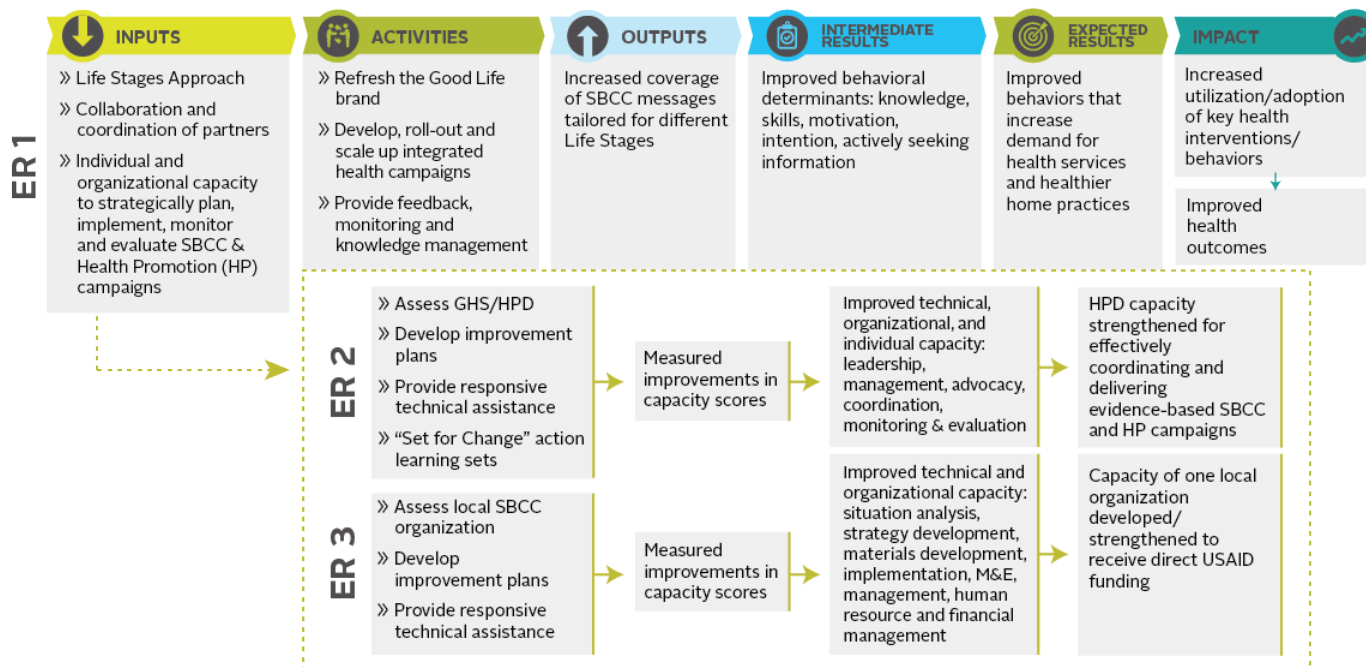
¹ A the National Health Promotion Strategy and Action Plan was out doored in October 2018

² As at 2014, there were no health promotion indicators in the DHIMS the national health information infrastructure for the health system.

- Strengthen the capacity of the GHS/HPD to lead design, development, coordinate and implement evidence-based social and behavior change campaigns
- Develop and strengthen the capacity of a local SBCC organization to be a potential direct recipient of USAID funding.

Working collaboratively with the GHS and partners, an overarching health communication brand of the GHS- “GoodLife, Live it Well” (GLLiW) was refreshed and launched in July 2016. An integrated mass media campaign using the GLLiW brand on health themes described above was developed in 2017 and continue to be scaled targeted at appropriate audiences using the Life Stages approach. While the campaign is being rolled out nationwide, emphasis in programming targets five focus USAID priority regions (Northern, Volta, Central, Western, Greater Accra) which record suboptimal health outcomes in the country.

The USAID Communicate for Health’s theory of change model shows how inputs and activities contribute to outputs, intermediate results, expected results, and impact (see diagram below). The project is not resourced for face-to face household data collection. It leverages Ghana’s high mobile phone ownership and voice subscriber penetration rates and prioritizes an innovative mobile phone technology using Interactive Voice Response (IVR) and Random Digit Dial (RDD) as its main approach to monitoring and evaluation in accordance with its Activity Monitoring and Evaluation Plan (AMEP). The use of mobile technology also supports nearly real-time monitoring to allow programmers to assess and improve the reach and impact of the USAID Communicate for Health programming and will provide important information for



decision makers considering scale up.

In early 2017, the USAID Communicate for Health fielded a survey using the IVR/RDD mobile technology with Life Stage groups to establish baseline values for indicators in its AMEP.

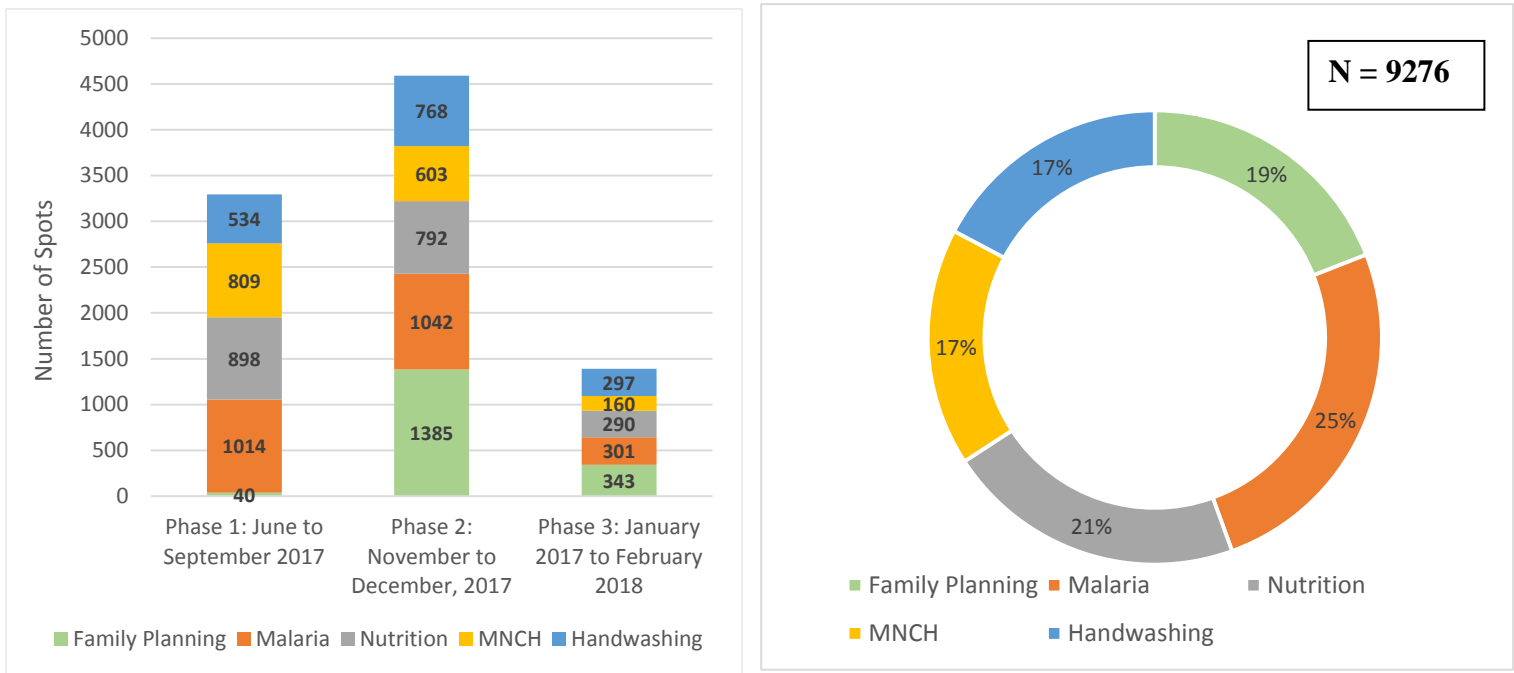
Targeting the five USAID priority regions, the survey elicited information from 2,250 respondents on exposure to health campaign messages, behavioral determinants and behaviors as part of the steps to behavior change. A follow up survey conducted nine months later with the baseline cohort monitored self-reported changes in project outcomes.

Programming

Prior to the execution of the follow up survey, Communicate for Health broadcast over 9,000 spots/programs on thematic areas targeting Life Stage audiences on popular national radio and regional radio stations during prime and peak time. These spots were in English and local languages spoken in the USAID priority regions. Funding uncertainty was a key challenge for the project, particularly during the last quarter of YR 3 (July-September 2017). This obviously impacted on programming as a number of new materials for broadcast on TV (including TV stories on breastfeeding, newborn care, malaria prevention and case management and family planning and the Maternal Health Channel series) and development of new TV and radio programs such as the "Slice of Life" campaign were placed on hold. The programming adopted is presented in Figure i.

Distribution of Spots Aired by Thematic Area

Figure i



FOLLOW-UP KEY RESULTS

STUDY PARTICIPANTS

Survey participants were stratified by Life Stage, as follows:

- F18-35: Females between ages 18-35 (not pregnant and not caring for child under age 5)
- M 18-35: Males between ages 18-35 (partner not pregnant, not caring for child under age 5)
- F w/CU5: Female caregivers of child under age 5
- M w/CU5: Male caregivers of child under age 5
- PW: Pregnant women
- Partner/PW: Male partners of a pregnant woman

A total of 2,250 participants were recruited for the study at baseline in 2017 (See appendix 1), and these respondents were then called during the follow-up panel survey nine months later. First, they were asked 12-14 questions on demographic characteristics, access to media channels and exposure to health messages. Six (6) extra exposure questions containing audio clips were added to the follow-up survey. Next, cohort-specific questions were asked for each Life stage. Of the original 2250 participants, 707 (31%) completed the follow up panel survey in 2018. Table I below shows the distribution of participants across the six life stages. Consistent with the baseline sample, the Youth/Young adults cohorts' proportions are the most heavily represented. Pregnant women on the other hand consisted of only 3% of the sample. Obtaining completed interviews from pregnant women was challenging, partially due to their low prevalence among the general population (less than 5% of the general population). Further details on recruitment and response rate calculations are available in the Survey Implementation Methodology section. It should be noted that responses for the Pregnant Women cohorts are based on a very small sample of 24, hence Figures and analysis for this subgroup should be viewed in this context.

Table I –Sample size and Response rates by Life stage

LIFE STAGES	N	%	Response Rates
Female Youth/Young Adult	241	34%	34%
Male Youth/Young Adult	240	34%	34%
Pregnant women	24	3%	27%
Partners of pregnant women	67	9%	30%
Female Caretakers of children under 5 years	53	8%	25%
Male Caretakers of Children under 5 years	82	12%	25%
TOTAL	707	100%	-

Life Stage Audience	Number of completes at baseline	Number completes at follow-up	Percent of baseline respondents who completed follow-up
Female Youth/Young Adults 18-35	700	241	34%
Male Youth/Young Adults 18-35	702	240	34%
Pregnant Women	89	24	27%
Partners of Pregnant Women	221	67	30%
Male Caretakers of Children under 5 years	329	82	25%
Female Caretakers of children under 5 years	209	53	25%
Total	2,250	707	31%

CHARACTERISTICS OF STUDY RESPONDENTS

Respondents in the follow-up survey are younger, urban, more highly educated with more male representation compared to the general population. Men comprised 55% of the sample with women accounting for 45%. Per the GSMA (2017) report, mobile phone uptake amongst women in Ghana is 42%, which may partially explain the why fewer women completed the survey. The follow up sample more closely mirrors the population of Ghana than the baseline with respect to gender and regional distribution of respondents.

The tables 2-3 provide highlights of key demographic data collected for the follow up survey participants. Data are further disaggregated by the program target regions of Greater Accra, Western, Northern, Central and Volta. Comparisons with the country of Ghana use data from the 2014 Demographic and Health Survey and 2017 Ghana Population and Housing Census, as applicable. Responses from the follow-up panel survey are illustrated and compared to the baseline panel survey results. In this report, responses are analyzed per thematic/programmatic area.

Sampling for the baseline survey utilized probability proportionate to size sampling, thus participants are not evenly distributed across the sample. The Greater Accra region has the second highest population in Ghana and consequently was over represented across life stages accounting for 51.2% of the sample (Table 2). When disaggregated, there is a even split of respondents in the remaining regions from 11% to 13% for participants who completed the survey. Pregnant cohorts drew heavily from the Northern region relative to other cohorts. This corresponds with higher than average child-bearing rates in the Northern region (Ghana Statistical Service, 2017). The sample consisted of more urban dwellers (71%) versus 29% rural dwellers. Ghana country statistics indicate persons living in urban areas at 54%.

Table 2 - Cohort Demographics – Region (% of study participants)

Regions	F w/CU5	F 18-35	M w/CU5	M 18 - 35	P/PW	PW	Grand Total
Greater Accra	55%	61%	43%	50%	34%	42%	51%
Western	11%	7%	13%	14%	16%	0%	11%
Northern	4%	10%	17%	12%	25%	38%	13%
Central	25%	10%	15%	13%	19%	8%	13%
Volta	6%	12%	12%	12%	4%	13%	11%
Grand Total	100%	100%	100%	100%	100%	100%	100%

English was the most popular language chosen for the IVR survey (49.4%) followed by Twi (29.6%), Ewe (13%), Dagbani (5.7%) and Ga (2.4%). The preferred language was highly variable by region, with local dialects selected more frequently where expected: Ewe in Volta, Dagbani in Northern, Ga in Greater Accra.

The data suggests that the sample was more educated than the general population. Sixty – three (63%) of the sample had secondary, tertiary or higher education (Table 3). Seven percent of respondents had no education. By comparison, the national average of 15-49-year old’s completing Secondary-Vocational and above is 21.7% by strict definition and 68.2% when including *any* Secondary education (2014 Ghana DHS report).

Table 3 -Cohort Demographics-Highest Education Completed (% of study participants)

Level of Education	F18-35 (N-700)	M18-35 (N-702)	Fw/CU5 (N-209)	M w/CU5 (N-329)	Partner/PW (N-221)	PW (N-89)	Grand Total (N - 707)
Tertiary and Higher	23%	19%	24%	28%	16%	19%	27%
Secondary-Vocational	39%	42%	28%	23%	27%	27%	36%
Middle-JHS	22%	23%	27%	24%	28%	26%	22%
Primary	9%	9%	13%	15%	12%	12%	8%
No Education	7%	7%	8%	10%	17%	16%	7%

EXPOSURE TO GOODLIFE, LIVE IT WELL MESSAGES / BRAND

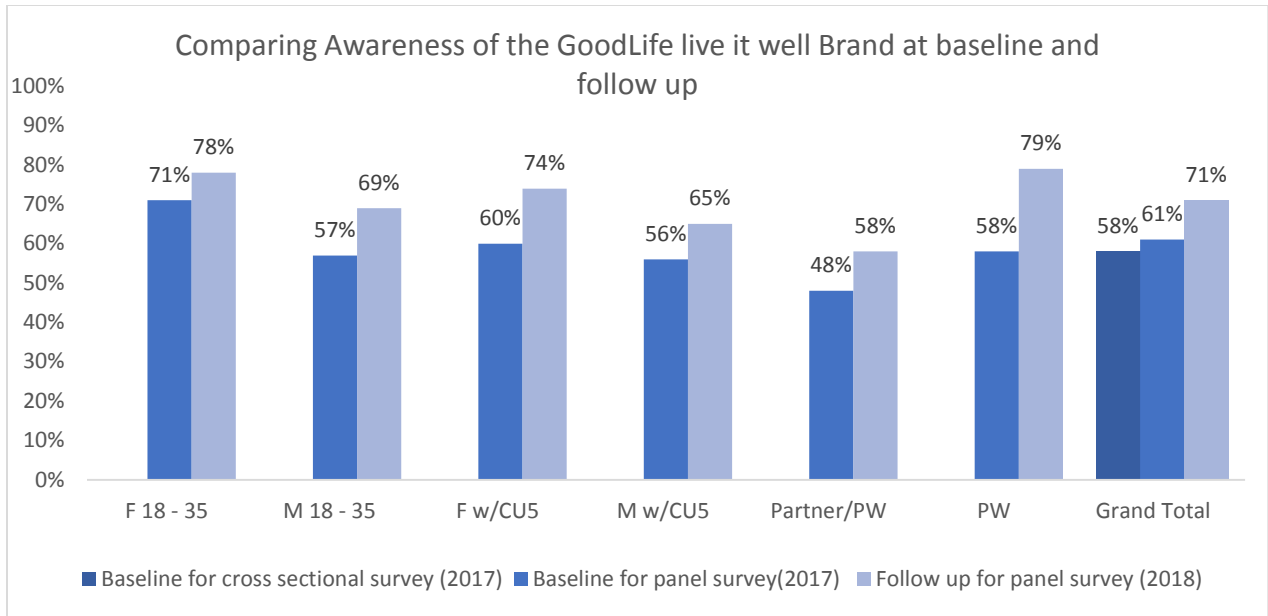
Exposure to communication messages on various health topics was one of the key indicators assessed by the study and the key measure for the M&E plan. The USAID Communicate for Health initiative's target for message recall is **70%** for each health topic for the fiscal year 2018. Between baseline and the 9 month follow up survey, GoodLife radio/TV spots/programs/interviews were aired in English and four local languages at least 11,000 times across various national and regional broadcast stations. Topics covered included malaria, nutrition, facility delivery, newborn care, handwashing, and family planning.

After the respondent's demographic information had been collected, the survey then asked questions about exposure to the *GoodLife, Live it Well* brand; exposure to any messages in three key health areas: handwashing, family planning and malaria; and recall of specific USAID sponsored/supported adverts/messages for the same thematic areas mentioned above. This information was collected from all respondents. Further questions about exposure to any messages and recall of specific messages on delivering in a facility, using condoms, exclusive breastfeeding for infants under 6 months, and complementary feeding for infants 6-8 months were asked *only* of participants in relevant Life Stages. Due to the rate of attrition and relatively small sample sizes, a 1 – 2 percentage point difference is not indicative of change.

Exposure to GoodLife, Live it Well Campaign

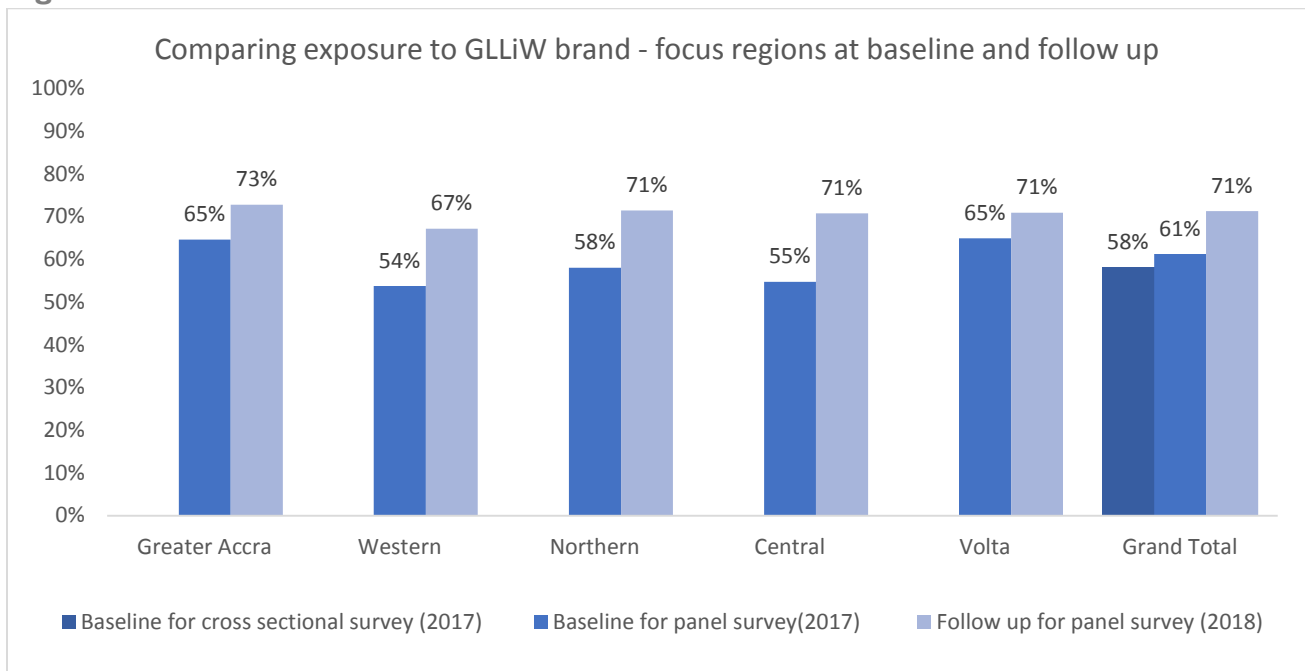
The data (Figure 1) suggest that there is an increase in exposure to the GoodLife Campaign from 61% at baseline to 71% at follow up. This illustrates gains in reaching the respondents with the GoodLife campaign have been maintained and further increased. Awareness of GoodLife increased across all life-stages and continues to be greater among female cohorts at 74% - 79% compared to 58%-69% for male cohorts.

Figure 1



Brand recall seemed to increase across all focus regions (Figure 2). The highest recall rates were recorded in Greater Accra (73%) and the least in the Western Region (67%). Mix of stations, programming dose and schedule for the regions that recorded less than 70% exposure can be reviewed and further optimized to reach more people and build on gains so far.

Figure 2



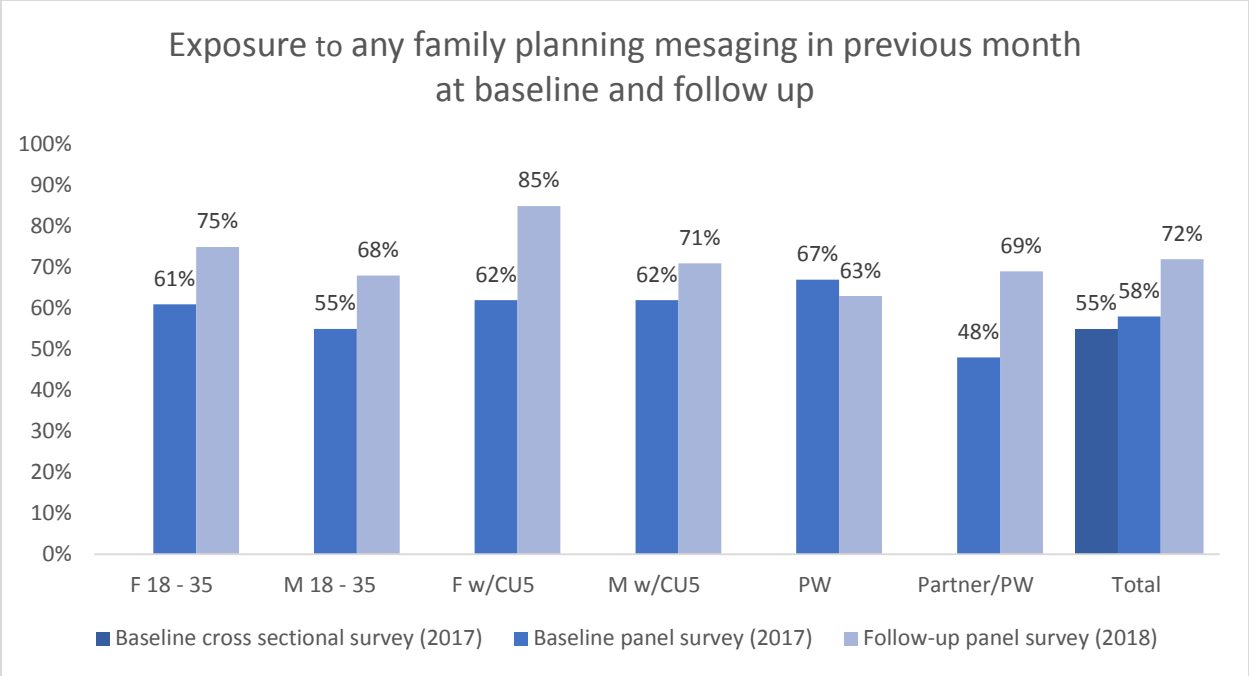
FAMILY PLANNING MESSAGE EXPOSURE, BEHAVIORAL DETERMINANTS AND BEHAVIORS

Comparing exposure to Family Planning Messaging at baseline and follow up

The trend suggests a marked increase in exposure to any family messages from 58% at baseline to 72% at follow up (Figure 3). The USAID Communicate for Health allocated a greater part of its SBCC programming to family planning following the finding low message exposure at baseline. This has contributed to improved trends observed. Other SBCC programming from USAID implementing partners may have contributed to this trend.

Female Cohorts reported substantially greater increases in exposure (63% to 85%) compared to the male cohorts (68% - 71%). Exposure to messages on family planning showed trends of increasing across all focus regions. Central Region (79%) reported the highest rate of exposure. The only region that is not in the 70% percentile is the Western Region (65%).

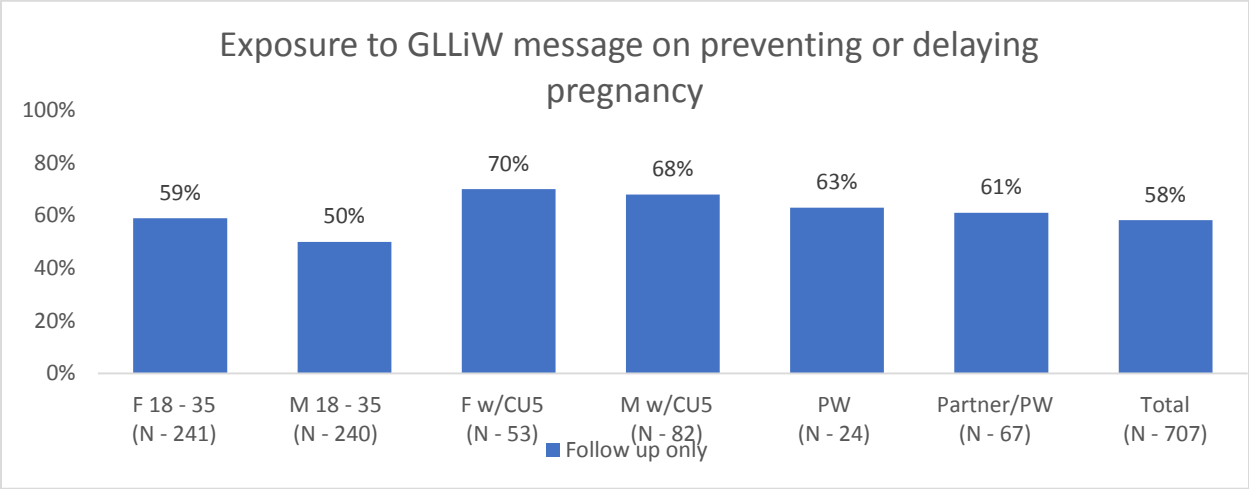
Figure 3



Exposure to specific GLLIW message on preventing or delaying pregnancy

The question for exposure to the specific USAID supported or GoodLife message on preventing or delaying pregnancy was asked at follow up study only (Figure 4). Caregivers with children under 5 reported the highest exposure around 70%, and M 18-35 reported the lowest (50%). Overall, 58% of respondents reported hearing the message. As expected, this is lower than the exposure reported for 'any family planning message' as the former may include messaging from other campaigns.

Figure 4

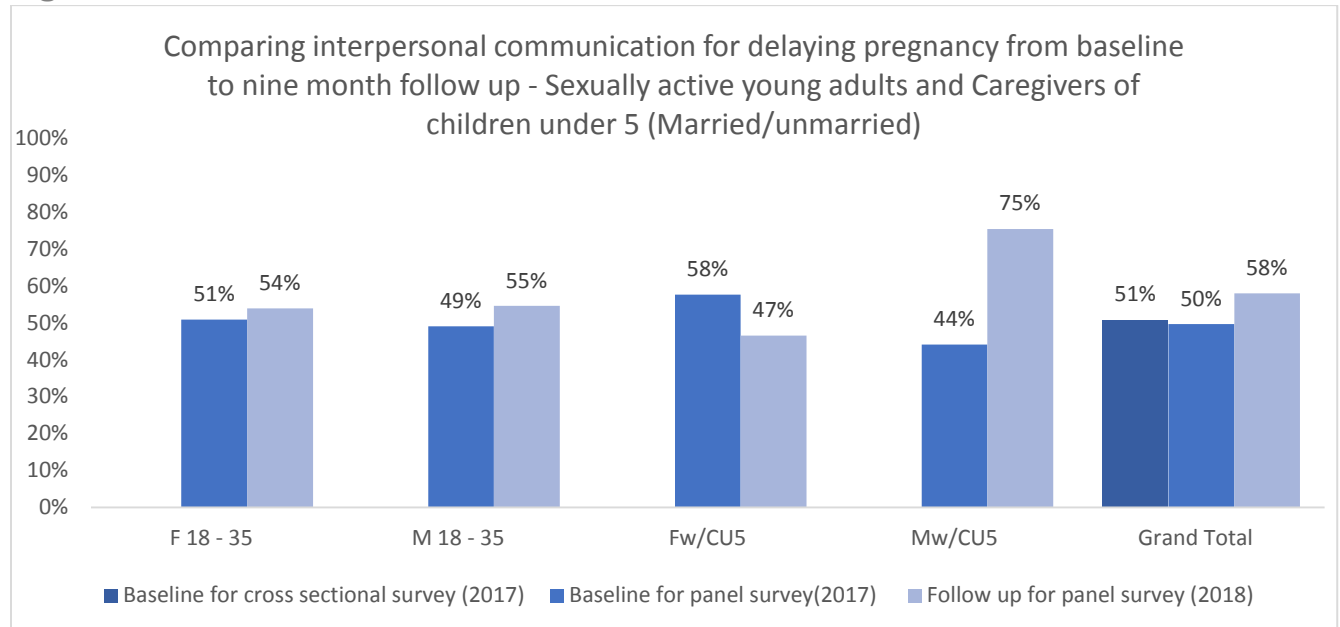


Interpersonal Communication about delaying pregnancy - Sexually active young adults and CU5

The data suggest the overall proportion of respondents who discussed issues related to contraceptives increased from 50% at baseline to 58% at follow-up (Figure 5). A breakdown of the data shows that the M w/CU5 cohort was largely responsible with a spiked increase, while the F 18-35 and M 18-35 reported small increases. Notably, the F w/CU5 showed a reduced trend in discussion about contraceptives over the 9-month period.

Messaging can be couched to engage and excite this cohort to talk more about delaying pregnancy. The relatively lower proportion of females talking about delaying pregnancy may be due to social and gender norms around childbirth.

Figure 5



Behavior - Participants doing something to prevent or delay pregnancy - Sexually active young adults and CU5

According to the data, the proportion of all sexually active participants who reported doing something to prevent or delay pregnancy was constant from baseline to follow up at 53%. The Ghana Maternal Health Survey (2017) reported that among sexually active unmarried women, 38% are currently using any contraceptive method and 31% a modern method³. For currently married women, 31% used any contraceptive method and 25% a modern method.

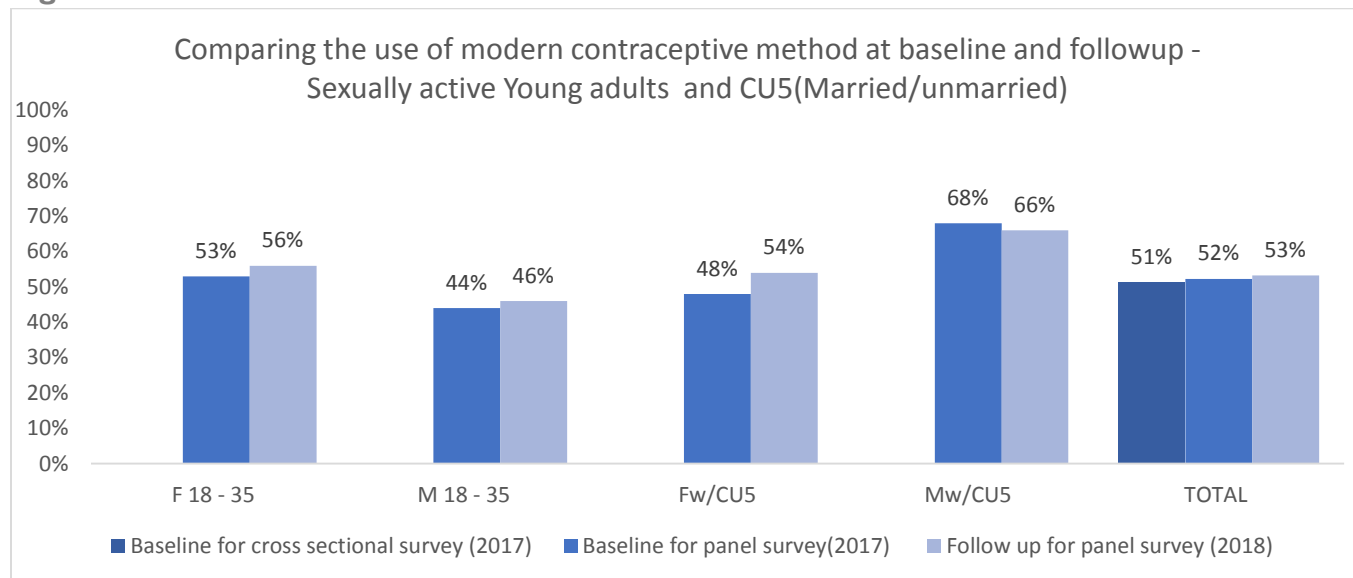
Comparing this metric, the USAID Communicate for Health responses may be higher than the Maternal Health Survey 2017 because of differences in how contraceptive prevalence was calculated. The USAID Communicate for Health sample disaggregated data for women not planning to get pregnant but not all women in the reproductive age regardless of the reproductive intentions. The USAID Communicate for Health would conduct an assessment to understand barriers to the behavior.

Use of Modern Contraceptive Method - Sexually active young adults and CU5

³ Ghana Statistical Service (GSS), Ghana Health Service (GHS), and ICF. 2018. Ghana Maternal Survey 2017: Key Indicators Report. Accra, Ghana: GSS, GHS and ICF

Findings suggest that use of modern contraceptives stayed constant from baseline to follow up, at 52-53% (Figure 6). Females may have experienced small improvements in contraceptive prevalence, but the sample for F w/CU5 was especially small (n=37 at follow-up) and any observed trends need to be interpreted cautiously.

Figure 6



N	F 18 – 35	M 18 - 35	FW/CU5	MW/CU5	TOTAL
Baseline for cross sectional survey (2017)	316	300	127	222	965
Baseline for panel survey (2017)	112	104	33	59	308
Follow up for panel survey (2018)	104	121	37	61	323

Contraceptive use for Sexually active young adults and CU5

At follow up, condoms, emergency contraceptive pills and injectables were the most used family planning methods at 31%, 22% and 18% respectively – Table 4. Modern methods were more popular than traditional methods.

It is apparent that emergency contraceptive pills remain a preferred method of family planning, especially for young adults. While there is no documented evidence on adverse effects of emergency contraceptive pills according to the World Health Organization (2010)⁴, the USAID Communicate for Health would work in conjunction with all relevant stakeholders including the GHS and other partners to provide information on a wide range of contraceptives and promote informed choice.

Table 4

Comparing Contraceptive use for Sexually active young adults and CU5 from baseline to nine months follow up

Main Family Planning method	Baseline for panel survey (2017)	Follow up for panel survey
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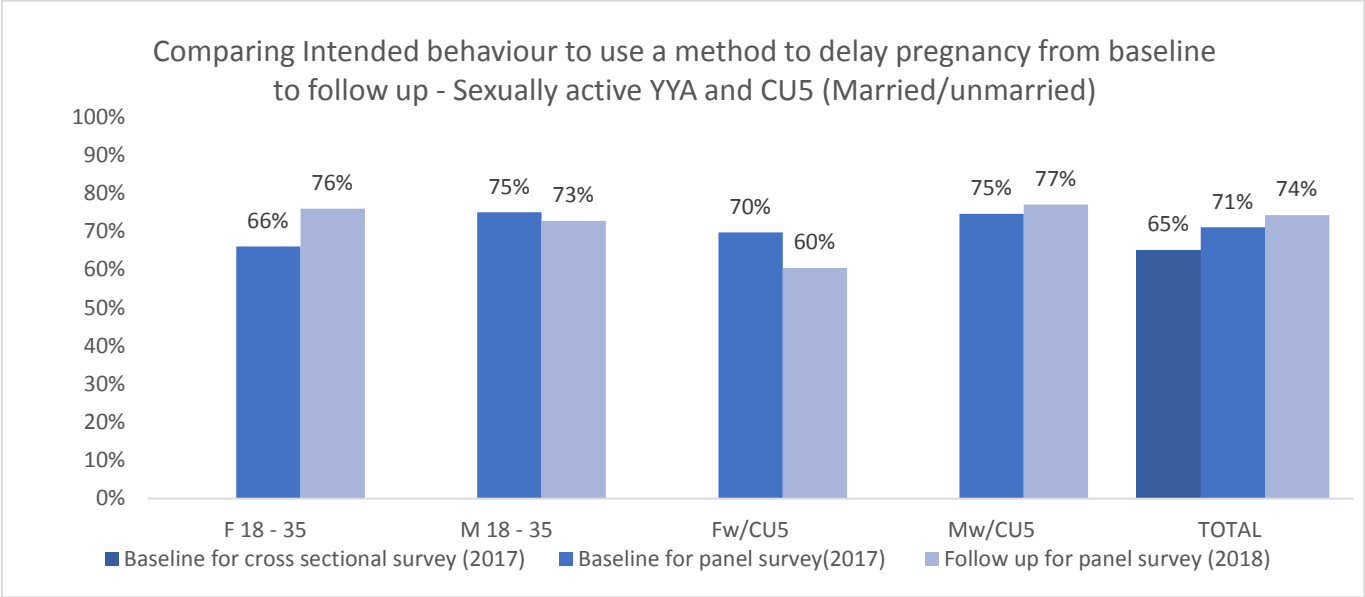
⁴ Westley E, Glasier A. Emergency Contraception: Dispelling the Myths and Misperceptions. Bulletin of the World Health Organization 2010;88:243-243.doi.2471/BLT10.077446

	N - 194	(2018) N - 211
Condoms (Male or female)	29%	31%
Emergency contraception	18%	22%
Shorter-acting, reversible methods (Injectables or daily pills)	16%	18%
Long-acting and permanent methods (Implants, IUCD, or permanent sterilization)	10%	7%
Non-hormonal methods (Calendar method or lactation amenorrhea)	9%	5%
Non-modern methods (Natural or traditional methods, withdrawal, herbs, or something else)	18%	15%
Don't Know	0%	2%

Intended behavior to use a method to delay pregnancy - Sexually active young adults and CU5

Trends in intentions to delay pregnancy suggested an overall increase from 71% at baseline to 74% at follow up. However, this trend varied by life stage, as Fw/CU5 and M 18-35 showed a decrease in intentions to delay pregnancy over time. For the use of modern contraceptives, intended behavior (Figure 7) is relatively high compared to the reported behavior.

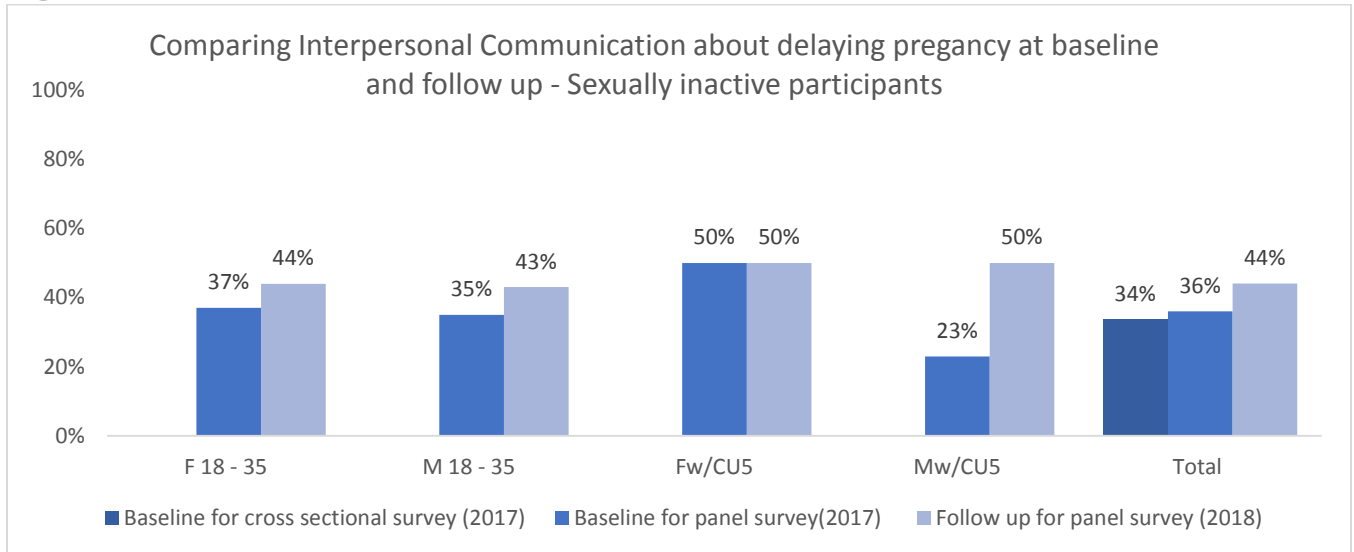
Figure 7



Interpersonal Communication about using a method to delay pregnancy – Sexually inactive participants

There was an overall suggestive increase for IPC for sexually inactive participants from 36% at baseline to 44% at follow up (Figure 8). Unsurprisingly, sexually inactive participants in every life stage reported talking less about delaying pregnancy (44% overall) compared to sexually active participants (58% overall).

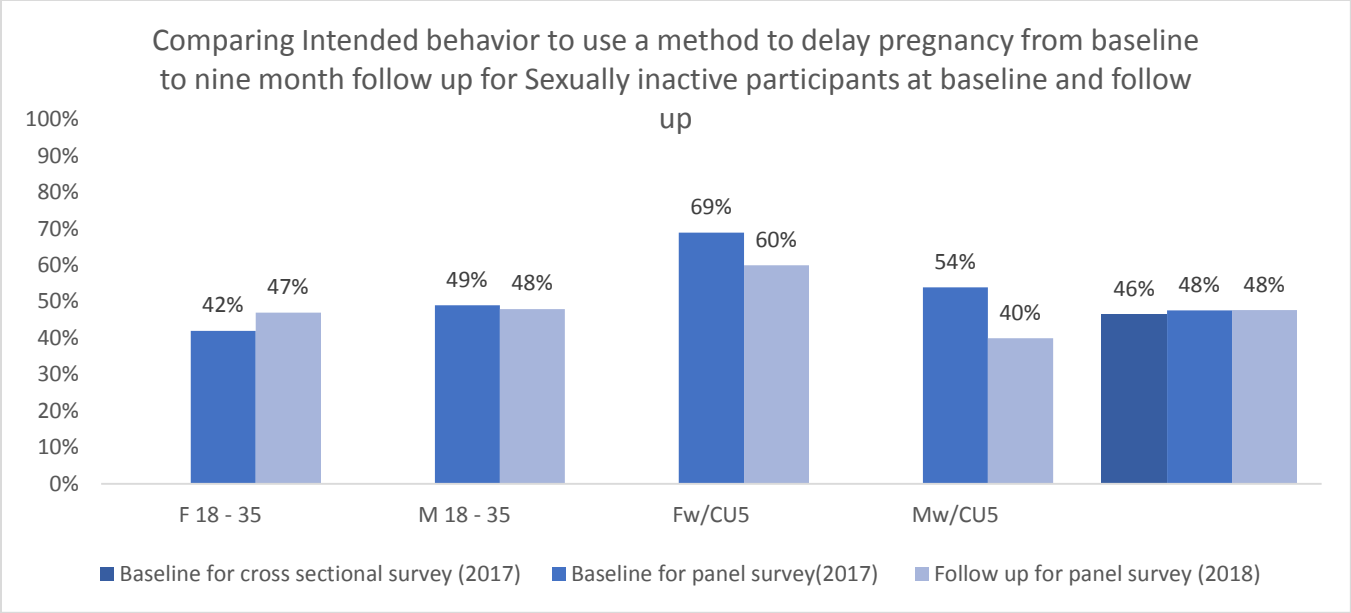
Figure 8



Intended behavior to use a method to delay pregnancy - Sexually inactive young adults and CU5

Intention to delay pregnancy amongst sexually inactive young adults and caregivers of children under 5 overall appeared to remain the same over time (Figure 9). As expected, this indicator for sexually inactive participants was lower (48%) compared to sexually active participants (74%). As they were not sexually active, it is less likely they would report an intention to delay pregnancy.

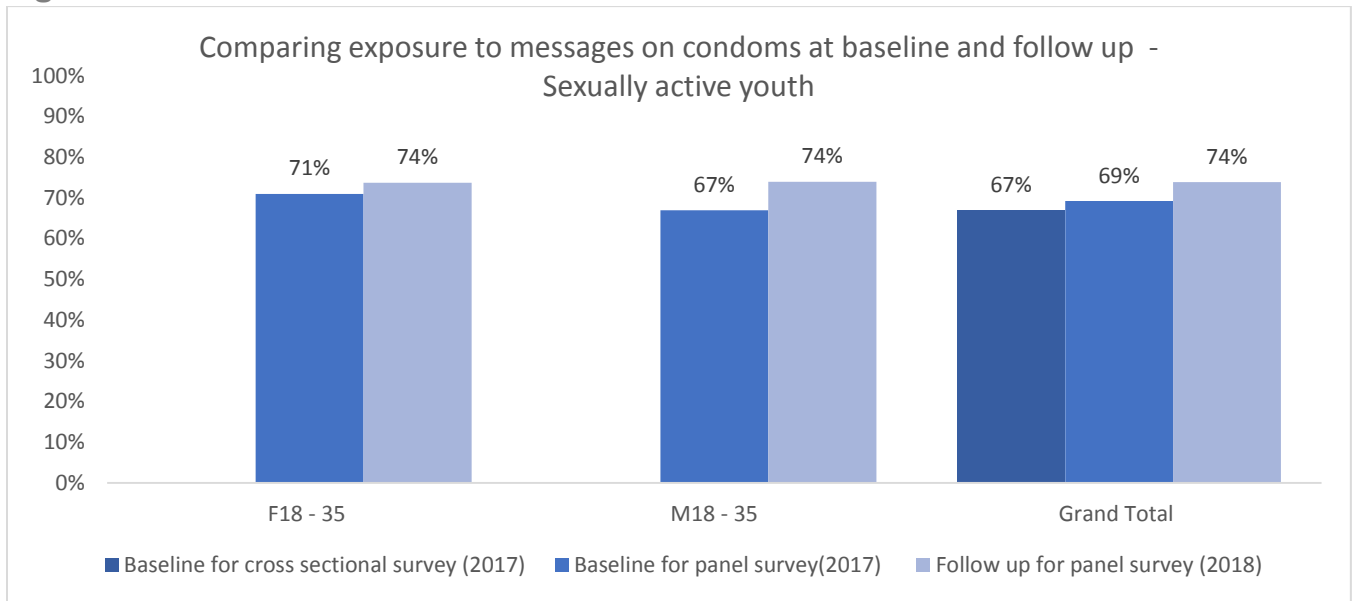
Figure 9



EXPOSURE TO MESSAGES ON CONDOMS, BEHAVIORAL DETERMINANTS AND BEHAVIORS

For sexually active youth, the data suggested an increase of about 5 percentage points in exposure to messages on condoms from baseline (69%) to follow up (74%). This was seen for all youth and young adults regardless of gender (Figure 10). Exposure surpasses the USAID Communicate for Health target of 70%.

Figure 10



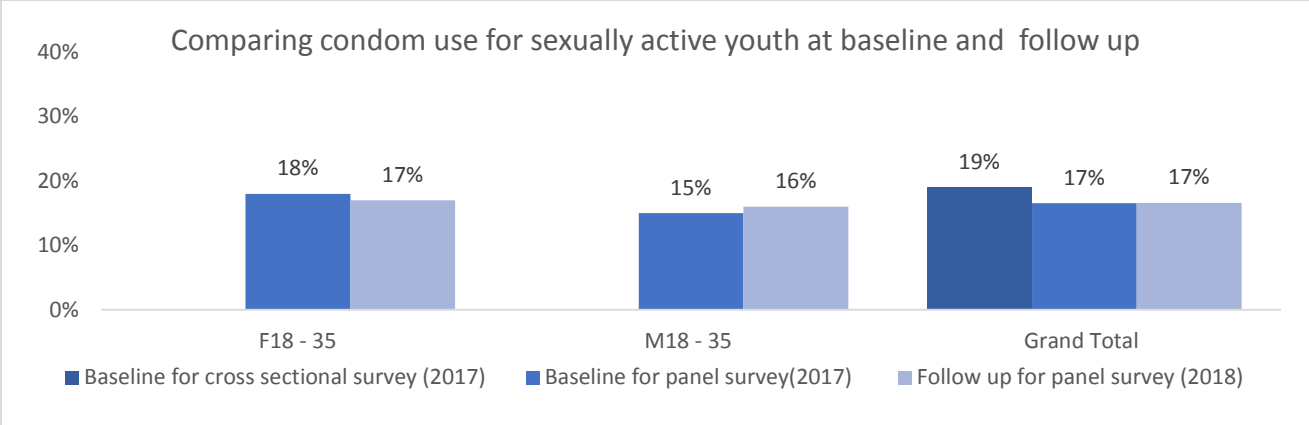
Exposure to messages on You Only Live Once (YOLO)

The USAID Communicate for Health worked with the National Population Council (NPC), Department for International Development (DFID), Palladium and Farmhouse Ltd, a creative firm in Ghana to integrate new GLLiW messages into seasons 3 and 4 of the popular Ghanaian youth soap opera series, You Only Live Once “YOLO” in Year 3. These were on broadcast on a popular television station, TV3 from September 4–November 27, 2016, and April 15–July 15, 2017. Free airtime was secured on the same popular TV station to rebroadcast all 52 episodes of seasons 1-4 beginning in December of 2017. Seasons 1 and 2 were primarily about young people, relationships, and sexual health and responsibility; seasons 3 and 4 introduced *GoodLife* messages about insecticide-treated nets, malaria case management, newborn care, family planning, reproductive health, handwashing with soap under running water, breastfeeding, and nutrition. YOLO messaging was measured at the follow up survey. As expected, young adults recorded the greatest exposure, F 18 – 35 (55%) and M 18 – 35 (54%). Caregivers of children under 5 on the other hand reported the least amounts of exposure of 32% for females and 35% for males. Overall 49% of respondents reported exposure to YOLO messaging.

Condom use for sexually active youth

Trends in the results suggest there was no change in the proportion of sexually active youth who reported using condoms from baseline to follow up at 17% (Figure 11). Lower rates of condom use amongst women may be attributed to several factors including cultural gender norms, power dynamics and access to healthcare services (PEPFAR,2009).

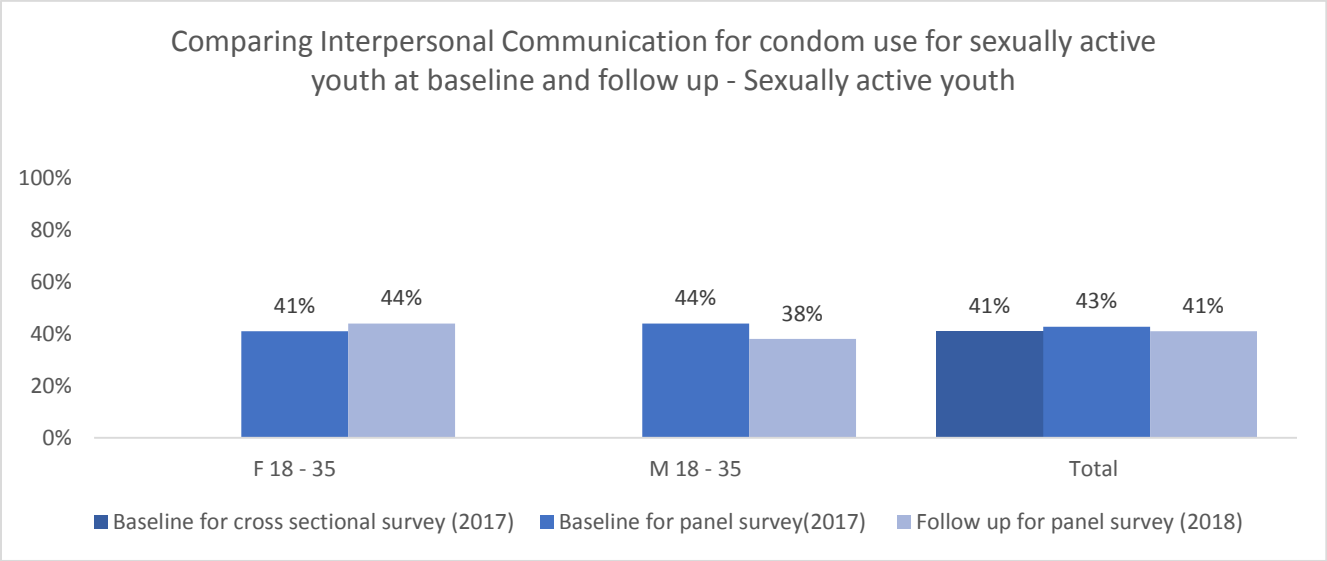
Figure 11



Interpersonal Communication about condom use for sexually active youth

Although there may have been a small trend toward increased IPC for condom use among young women over the survey period, the data suggests a trend toward less IPC among young men over time (Figure 12).

Figure 12



Intention to use condoms – Young adults

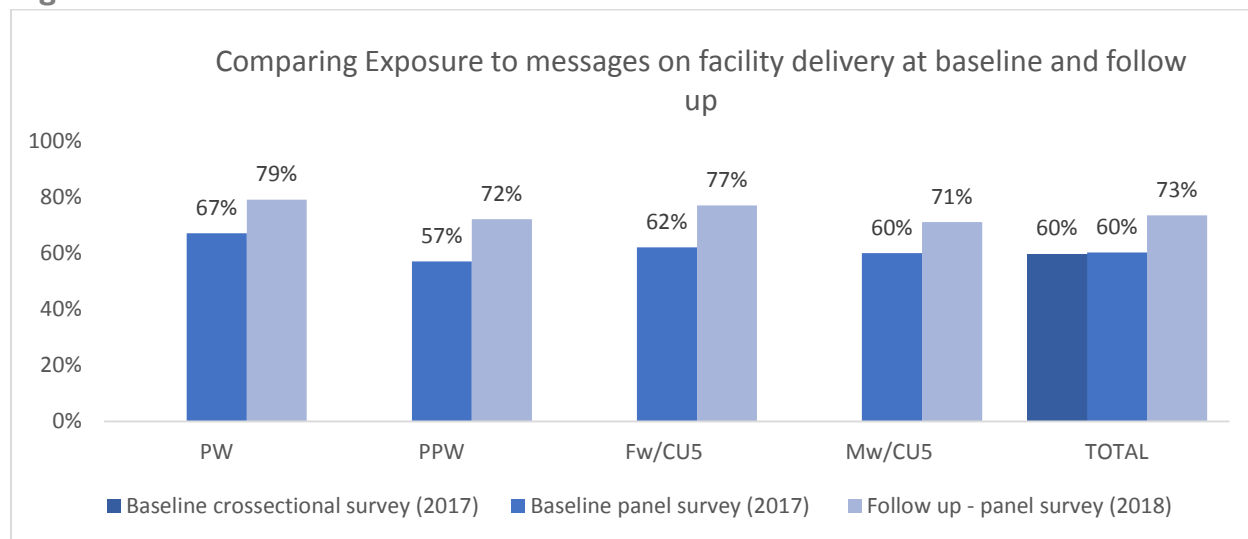
Intention to use condoms was higher than reported condom use behavior. However, over the period of the surveys, the data suggested a very slight decrease in intentions to use condom overall--from 28% to 26%. The variance between the reported behavior (17% overall) and Intention (26% overall) suggests that there may be barriers that inhibit the adoption of the intended behavior with an opportunity to further explore and incorporate into programming and messaging by the GHS and partners.

FACILITY BASED DELIVERY MESSAGE EXPOSURE, BEHAVIORAL DETERMINANTS AND BEHAVIORS

Exposure to messages on Facility based delivery

The data showed a trend of increased exposure from baseline at 60% to follow up at 73% (Figure 13). All cohorts reported increased exposure and were above the 70th percentile. Exposure to messages on facility delivery performed quite robustly and surpasses the USAID Communicate for Health target of 70%. However, the sample sizes for the relevant life stages were small, impacting the reliability of results across this behavior area.

Figure 13

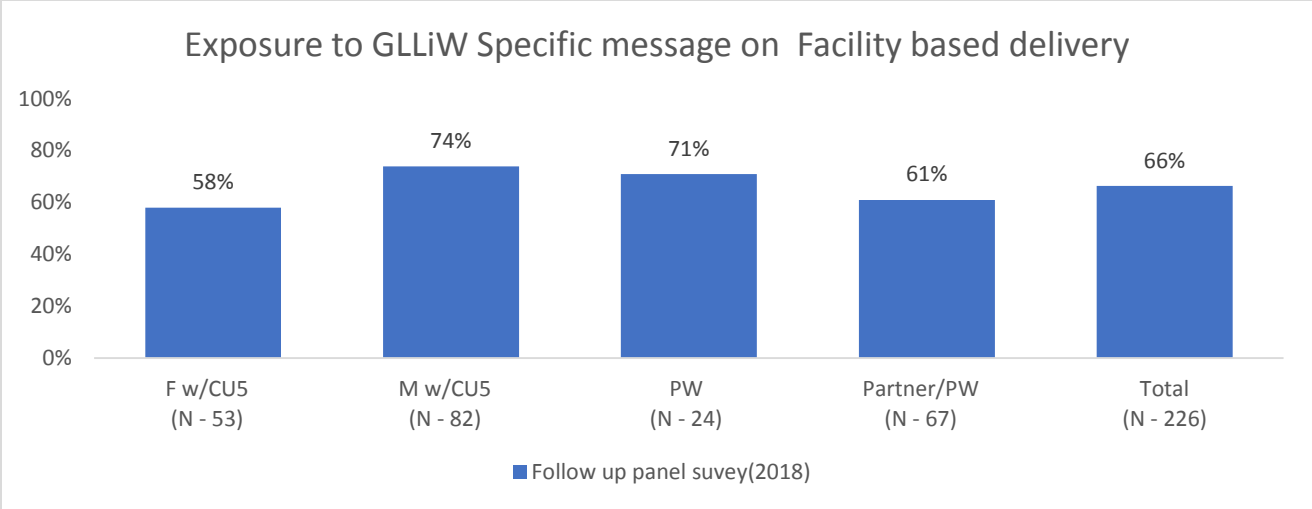


N	PW	P/PW	FW/CU5	MW/CU5	TOTAL
Baseline cross sectional survey(2017)	89	221	209	329	848
Baseline panel survey(2017)	24	67	53	82	226
Follow-up panel survey (2018)	24	67	53	82	226

Exposure to GLLIW Specific message on Facility based delivery

The question for exposure on the specific message on facility-based birth was asked at follow up only. There was an overall response of 66% (Figure 14). M w/CU5 reported the highest exposure of 74% and F w/CU5 the lowest at 58%. Generally, responses for exposure to the specific facility delivery message (Figure 14), were 7 percentage points lower than that for 'any message' in the previous month.

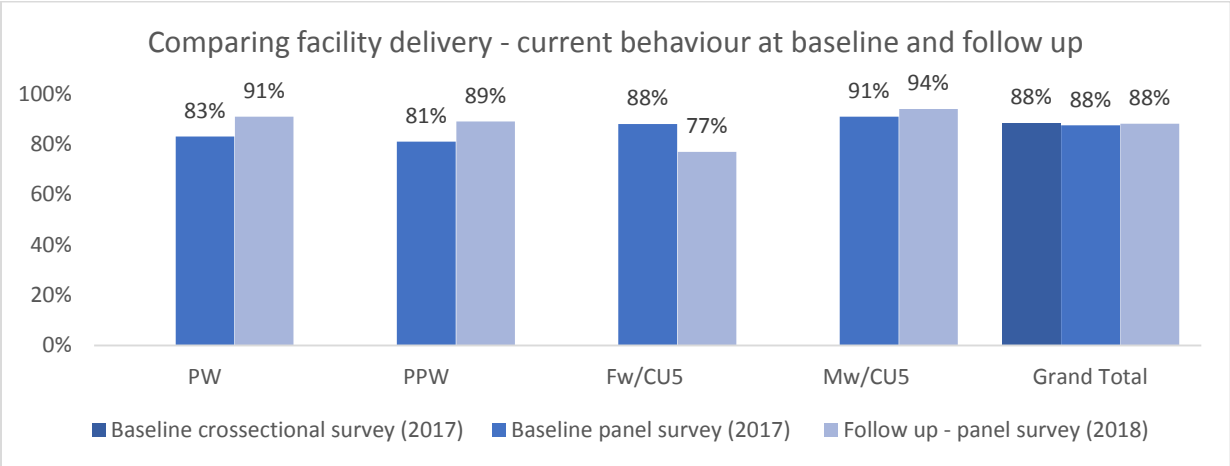
Figure 14



Facility Based Birth

The data (Figure 15) indicates that current behavior for facility delivery remains high but static at 88% from baseline to follow up. This is expected given the relatively short follow up period and small sample, as relatively few participants would have experienced a birth in the interim period. All life stages except F w/CU5 (-11%) recorded increases in behavior. Pregnant women (91%) and their partners (89%) reported increases over the period. The USAID Communicate for Health target of 70% was far exceeded in this topic area. The Ghana Maternal Health Survey (2017) also reports high facility delivery of 79%.

Figure 15



N	PW	P/PW	FW/CU5	MW/CU5	TOTAL
Baseline cross sectional survey (2017)	64	106	202	309	681
Baseline panel survey(2017)	18	31	51	76	176
Follow-up panel survey (2018)	23	53	48	71	195

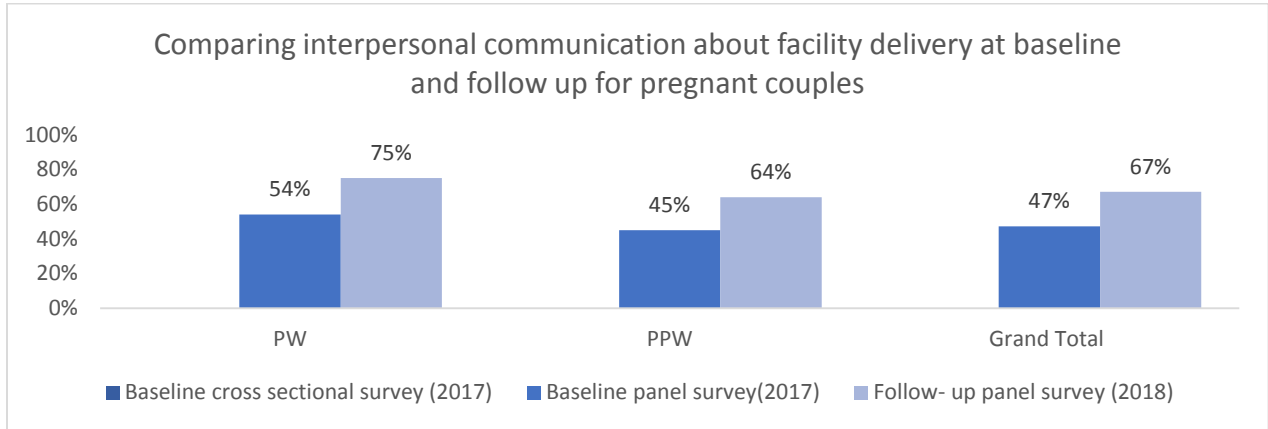
Methodology notes

Responses for 'I have not given birth yet' were removed from the sample as question does not apply to them.

Interpersonal communication about Facility Based Birth

There were suggestive increases from baseline (47%) to follow up (67%) on IPC about facility-based births, suggesting a marked increase over the period (Figure 16).

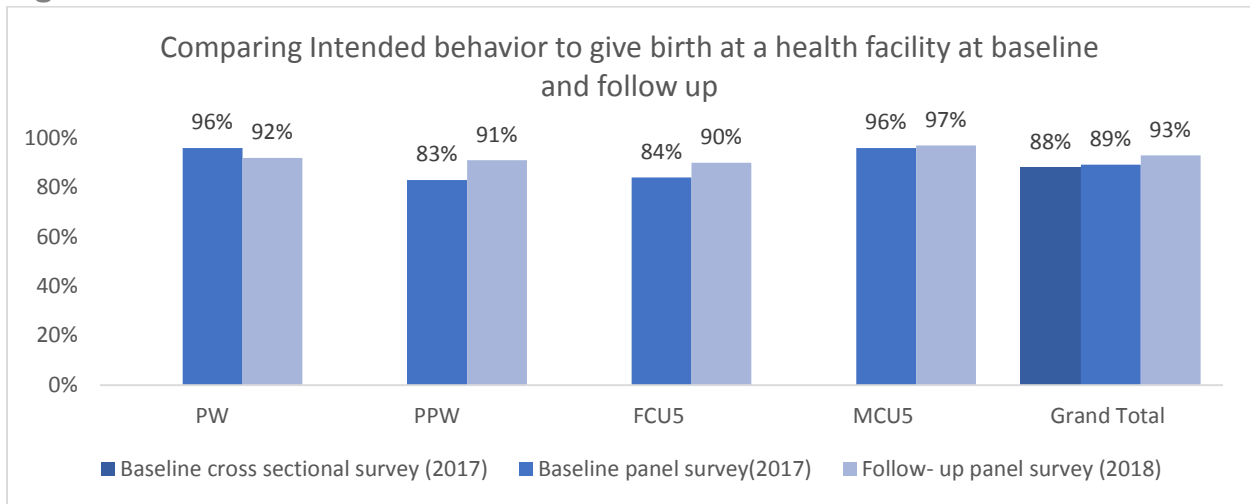
Figure 16



Intended behavior for Facility based Birth

Intention to give birth at a health facility was very high at 93% (Figure 17), and the trend suggests a marginal increase over the period from baseline to follow up. All cohorts reported intentions in the 90% percentile.

Figure 17

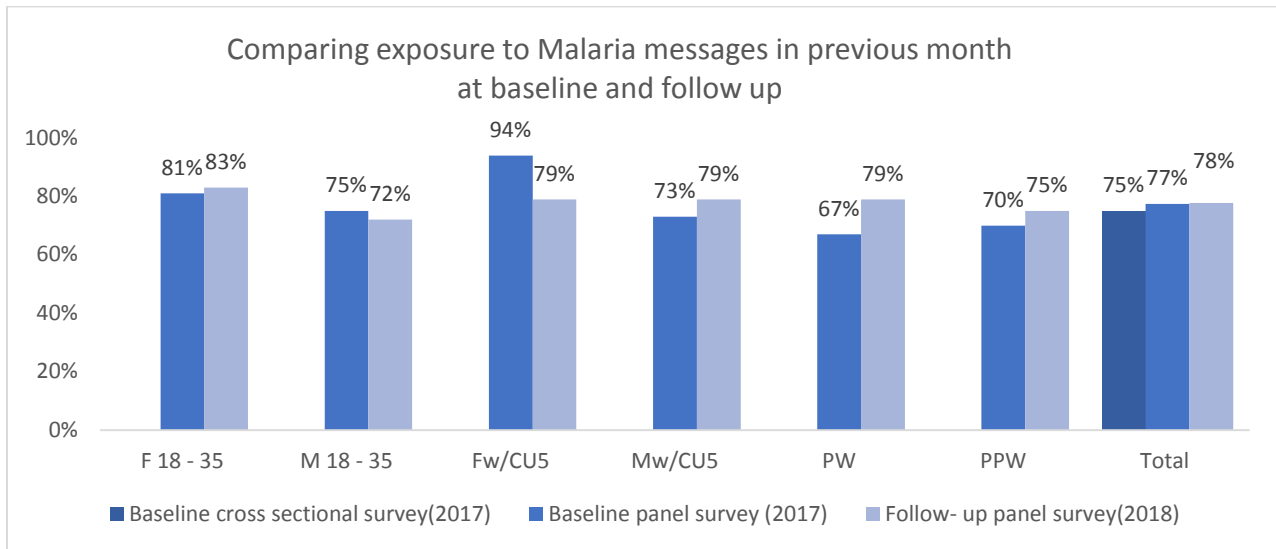


ITN/MALARIA MESSAGE EXPOSURE, BEHAVIORAL DETERMINANTS AND BEHAVIORS

Comparing exposure to messages on Malaria

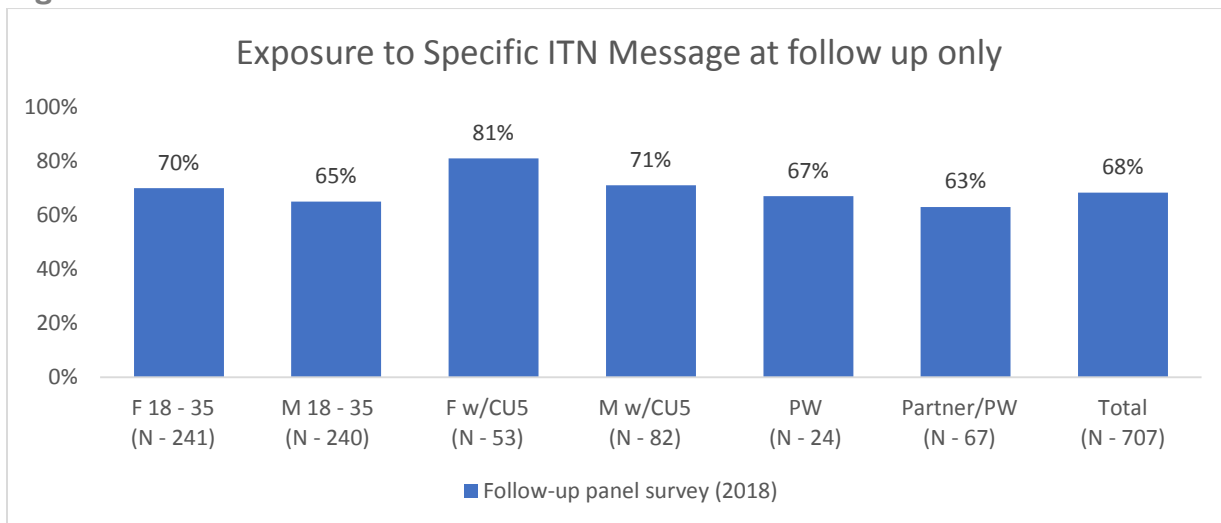
The data revealed a very marginal increase to 78% in exposure to malaria messages at follow up (Figure 18). Most life stages reported increases except the M 18 – 35 and F w/CU5. Reported exposure for all life stages was above the USAID Communicate for Health target of 70%.

Figure 18



The question for exposure on the specific message on ITN was asked at follow up study only. There was an overall report of 68% exposure (Figure 19). Again, F w/CU5 reported the highest exposure of 81% and Partners' of pregnant women, the lowest (58%). Generally, responses for exposure to the specific GLLIW ITN message, was 9 percentage points lower (Figure 19) than that for 'any message' in the previous month. This could be due to parallel/alternate ITN messages by GHS National Malaria Control Program, USAID Implementing Partners and other partners.

Figure 19

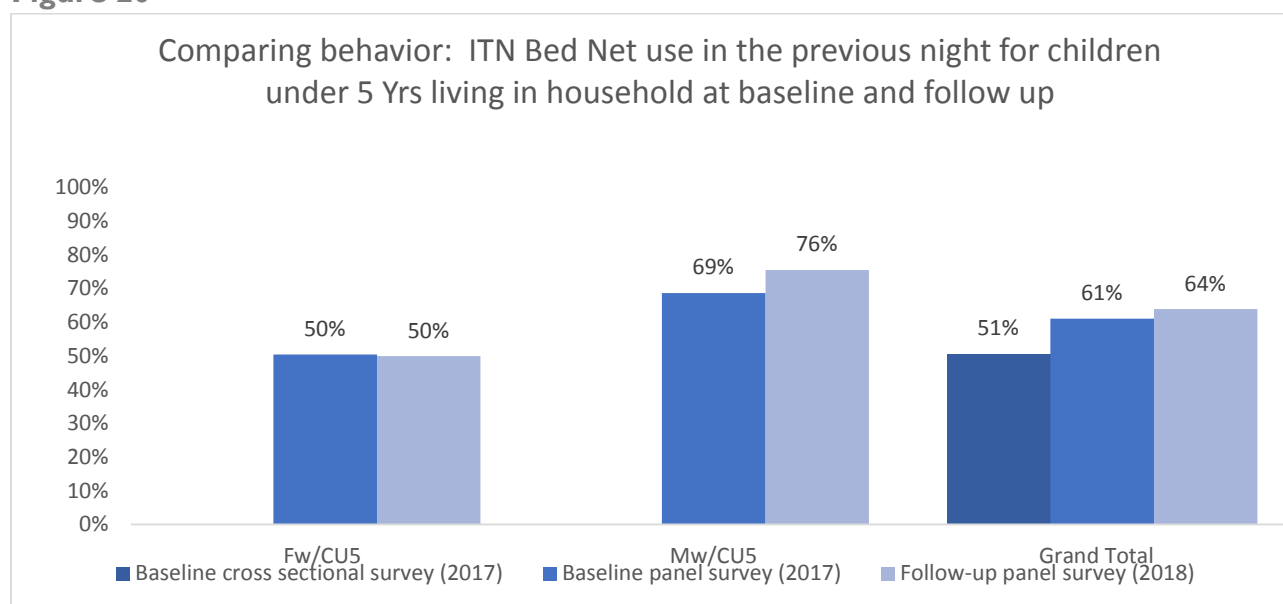


There was an increase in exposure to malaria messaging in all regions except Greater Accra Region and Central Region. The trend suggests a marked increase in exposure in Northern region (87%).

Comparing ITN use for children under 5 years

The data suggested a small net increase from 61% to 64% for caregivers who reported their children under 5 slept under a bednet the previous night. (Figure 20) M w/CU5(76%) reported an increase over the period. Child net use as reported by F w/CU5 on the other hand remained at 50%.

Figure 20



N	Fw/CU5	Mw/CU5	TOTAL
Baseline cross sectional survey (2017)	415	685	1100
Baseline panel survey (2017)	117	163	280
Follow-up panel survey (2018)	116	139	255

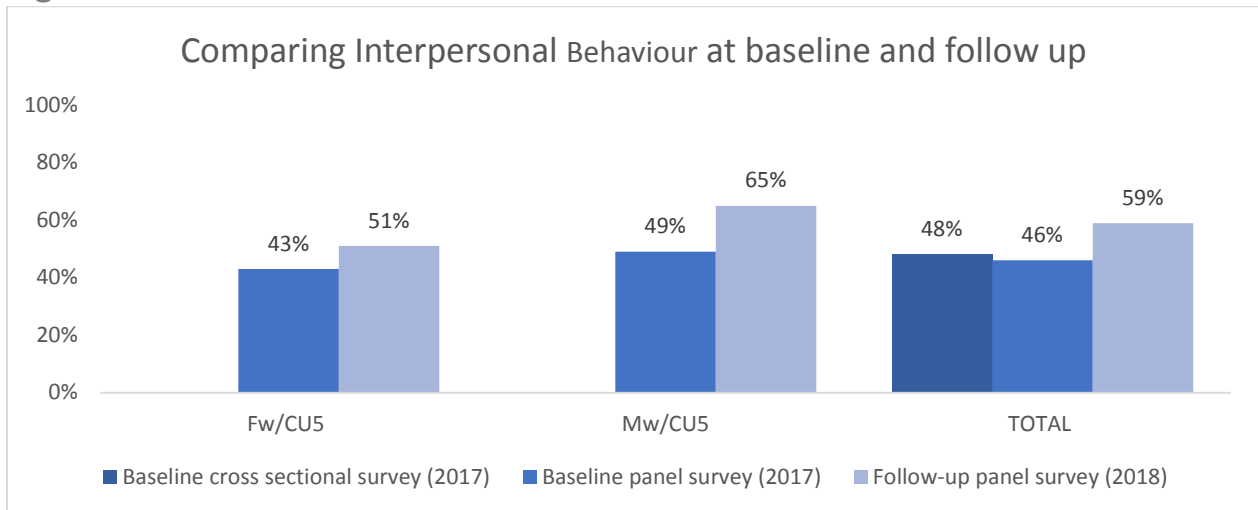
Methodology Notes:

- Current behavior (Baseline) represents a calculated result. Information was collected via two questions: a) the number of children under age 5 living in the household, b) the number of children under age 5 who slept under an ITN bed net the previous night. The figure shown is simply the number of CU5 who slept under an ITN the previous night divided by the total number of CU5 living in households.
- All calculations exclude: a) households reporting 0 children under 5 living in the household, b) households reporting a higher number of children sleeping under a net than they reported living in the household.

Interpersonal Behavior /ITN use - Caregiver of Children under 5

Per the responses, there was an increase in the trend for interpersonal communication about children sleeping under bed nets from baseline to follow up (59%) (Figure 21). M w/CU5(65%) were more likely to talk about ITN use for children under five than F w/CU5 (51%).

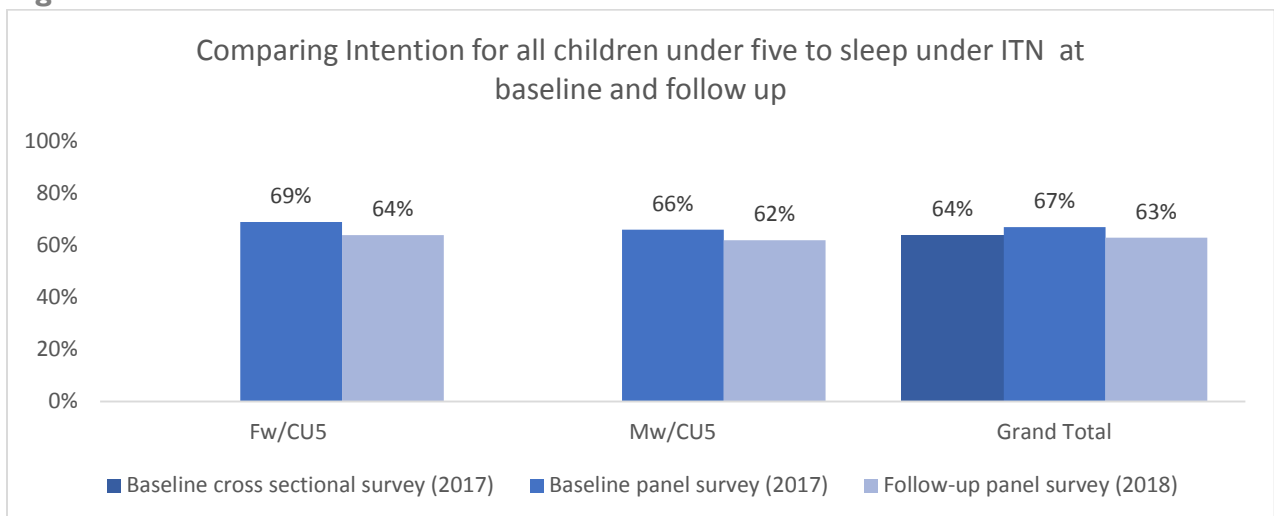
Figure 21



Intended Behavior /ITN use - Caregiver of Children under 5

For Caretakers of children under 5, there was a marginal decrease from baseline to follow-up for intention for all children under 5 to sleep under a net the next night (Figure 22). As the trend seems to decrease for this determinant, content and production of adverts should be reviewed to sustain and improve both behavior and behavioral determinants from baseline.

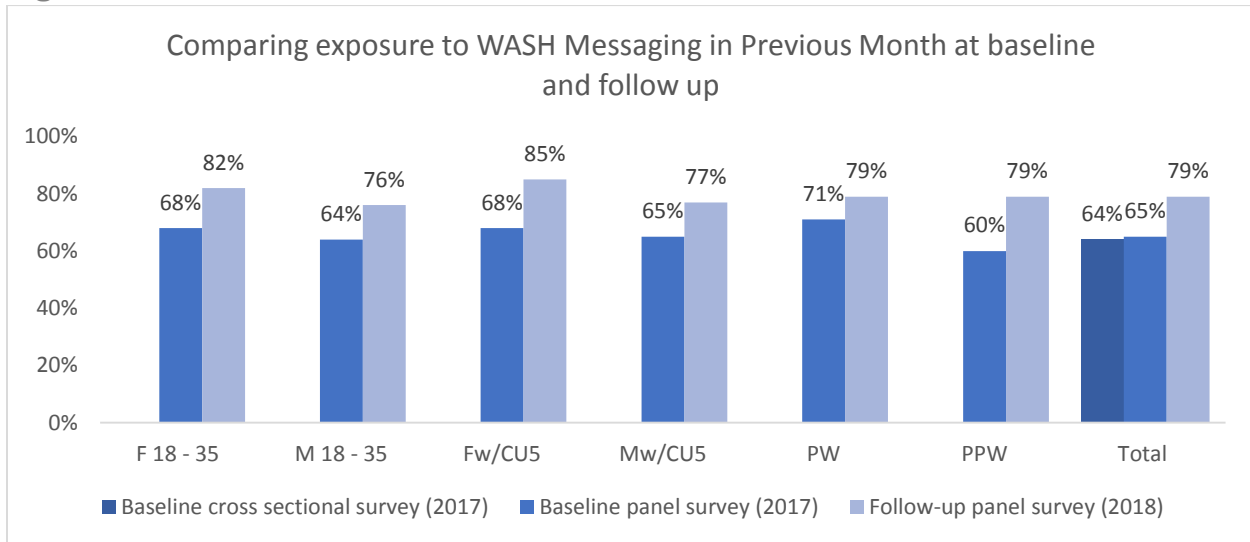
Figure 22



EXPOSURE TO MESSAGES ON WASH, BEHAVIORAL DETERMINANTS AND BEHAVIORS

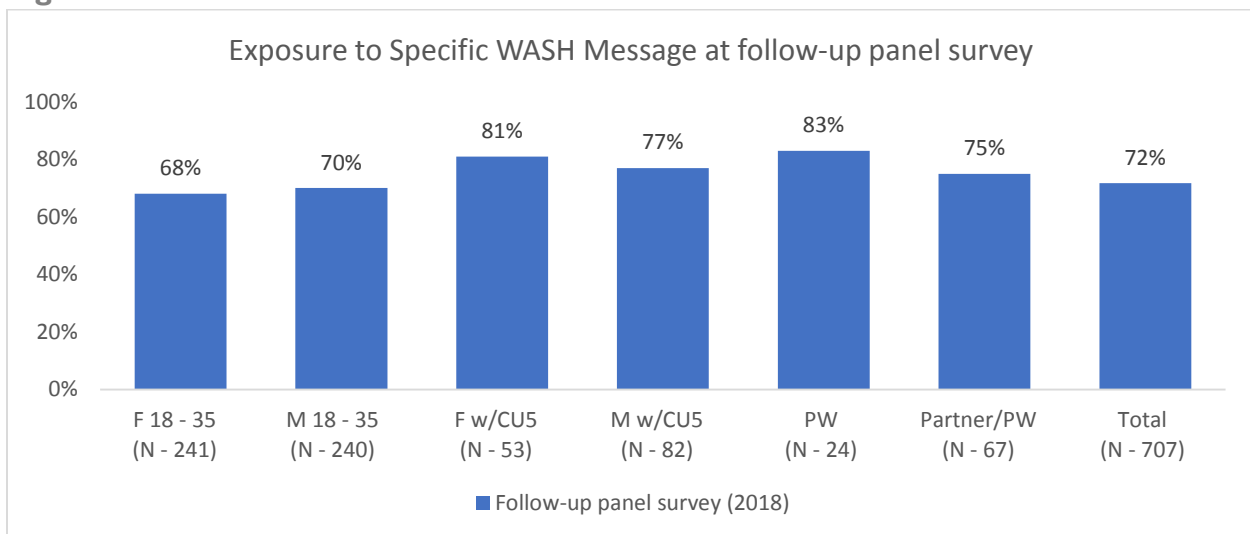
There was a suggestive increase for Exposure to any handwashing messages from 65% to 79% (Figure 23). Once again, trends suggest that gains made in the previous 9 months were maintained and increased. Respondents reported exposure greater than 70% across all life stages surpassing the USAID Communicate for Health project target of 70%.

Figure 23



The question for exposure on the specific GLLIW message on WASH was asked at the follow up study only – Figure 24. There was an overall response of 72%. Pregnant Women (83%) reported the highest exposure of 81% and F 18 - 35 the lowest (68%). Responses for exposure to the specific WASH message were 7 percentage points lower than ‘any WASH message’ in the previous month.

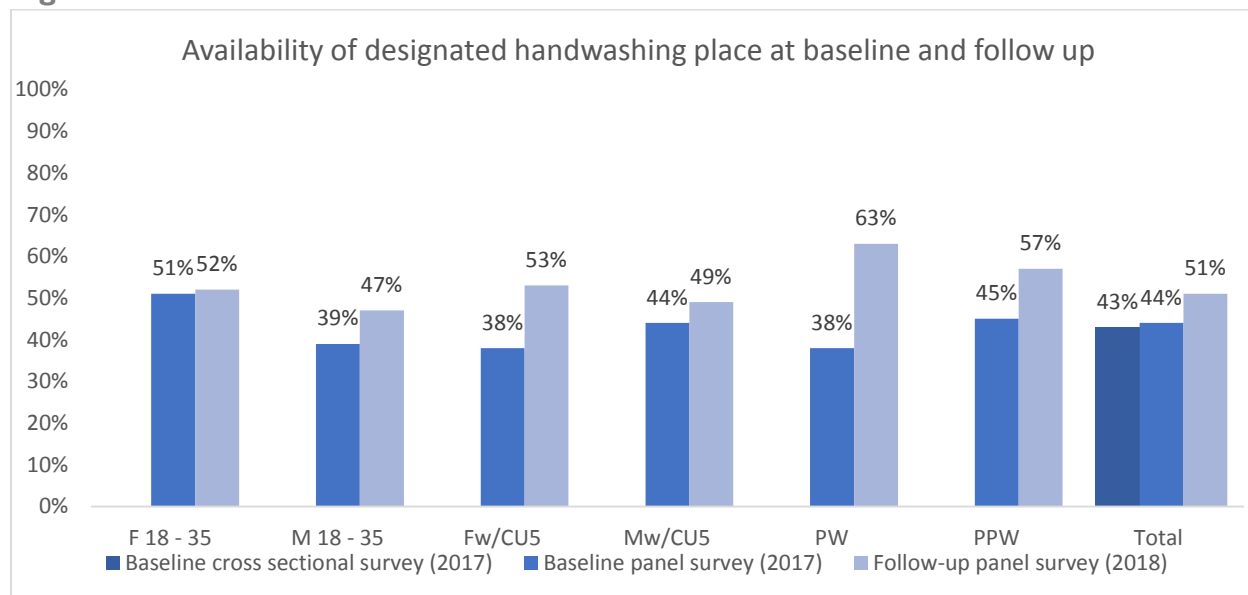
Figure 24



Availability of Designated handwashing place

According to the data trends, the proportion of respondents with a designated handwashing place increased overall from 44% at baseline to 51% at follow up (Figure 25). In comparison, according to the DHS 2014, the National average is 53.4%. Although all life stages self-reported increases from baseline to follow-up, the highest was recorded amongst Pregnant women from 38% at baseline to 63% at follow up.

Figure 25

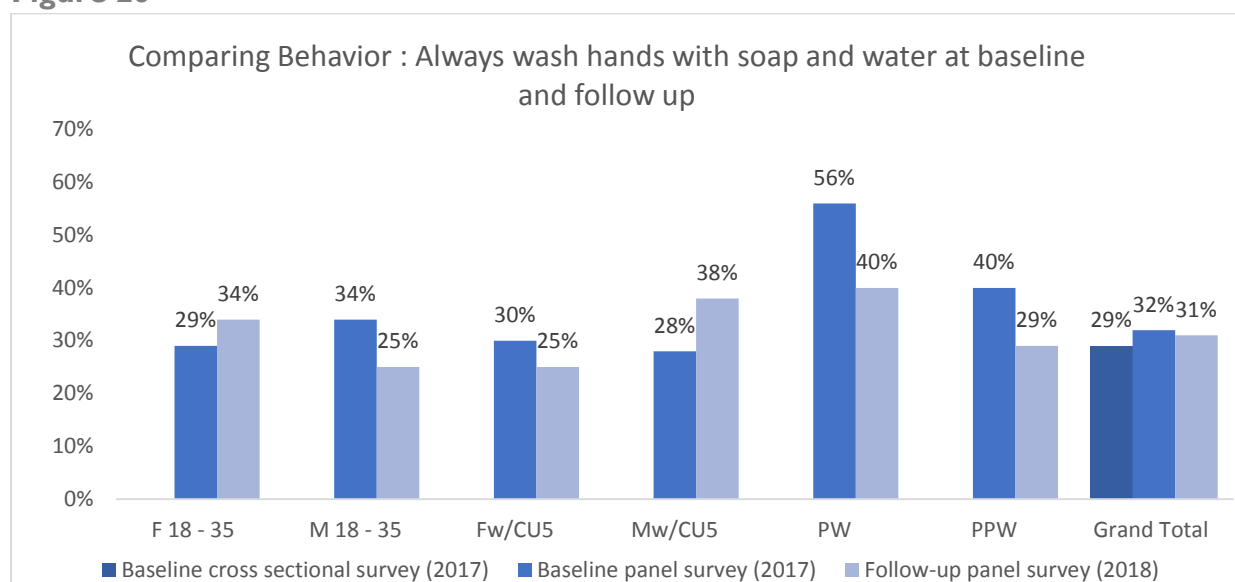


	F 18 - 35	M 18 - 35	FW/CU5	MW/CU5	PW	P/PW	Total
N							
Baseline cross sectional survey (2017)	700	702	209	329	89	221	2250
Baseline panel survey (2017)	241	240	53	82	24	67	707
Follow-up panel survey (2018)	241	240	53	82	24	67	707

Behavior: Always wash hands with soap and water

For handwashing behavior, there may have been a slight decrease in self-reported behavior to yield 31% at follow up (Figure 26). Three out of six cohorts reported a decrease in behavior (M 18 – 35, F w/CU5 and P/PW). According to DHS 2014, the National average is 39%. For the USAID Communicate for Health survey however, the number of persons who indicated washing their hands periodically were excluded accounting for the lower rate. More research should be conducted to find out the barriers to practicing hand washing with soap and water, especially when respondents reported increased exposure and behavioral determinants.

Figure 26



N	F 18 - 35	M 18 - 35	FW/CU5	MW/CU5	PW	P/PW	Total
Baseline cross sectional survey (2017)	322	275	94	141	44	101	977
Baseline panel survey (2017)	122	93	20	36	9	30	310
Follow-up panel survey (2018)	125	112	28	40	15	38	358

Methodology Notes:

- For the current behavior (Baseline) question, respondents were asked about the availability of soap & water at the handwashing station, and “always available” (shown above) was option #4.

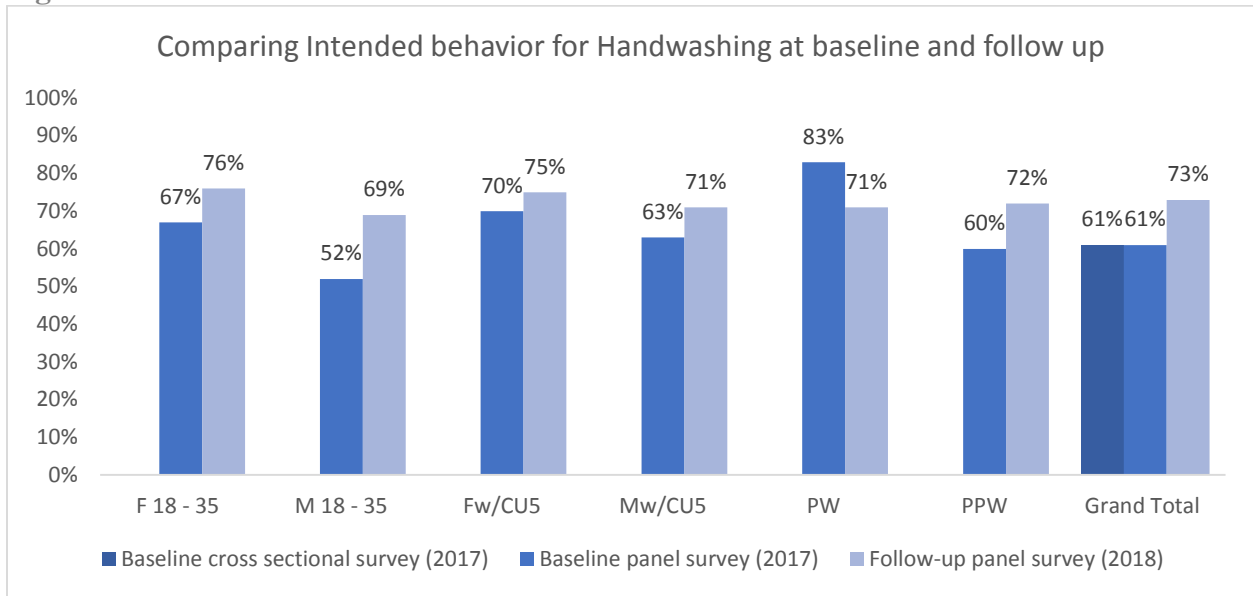
Interpersonal Communication - Handwashing

Per the data, Interpersonal Communication showed a trend of increasing, albeit slightly from baseline (62%) to follow-up (67%). The life stages that reported relatively higher interpersonal communication results were Pregnant women (79%) and Female Young adults (75%). Female Caregivers under 5 reported less discussion and interaction of handwashing messages at follow up than at baseline.

Intended behavior - Handwashing

Intention to use soap and water to wash hands in the next three months showed a trend of increasing from 61% at baseline to 73% at follow-up (Figure 27). All cohorts reported increases, except the Pregnant women cohort that decreased by 12 percentage points to 71%. (As with all the data from the Pregnant women life stage, these numbers should be interpreted cautiously because of the small number of Pregnant women at follow-up).

Figure 27

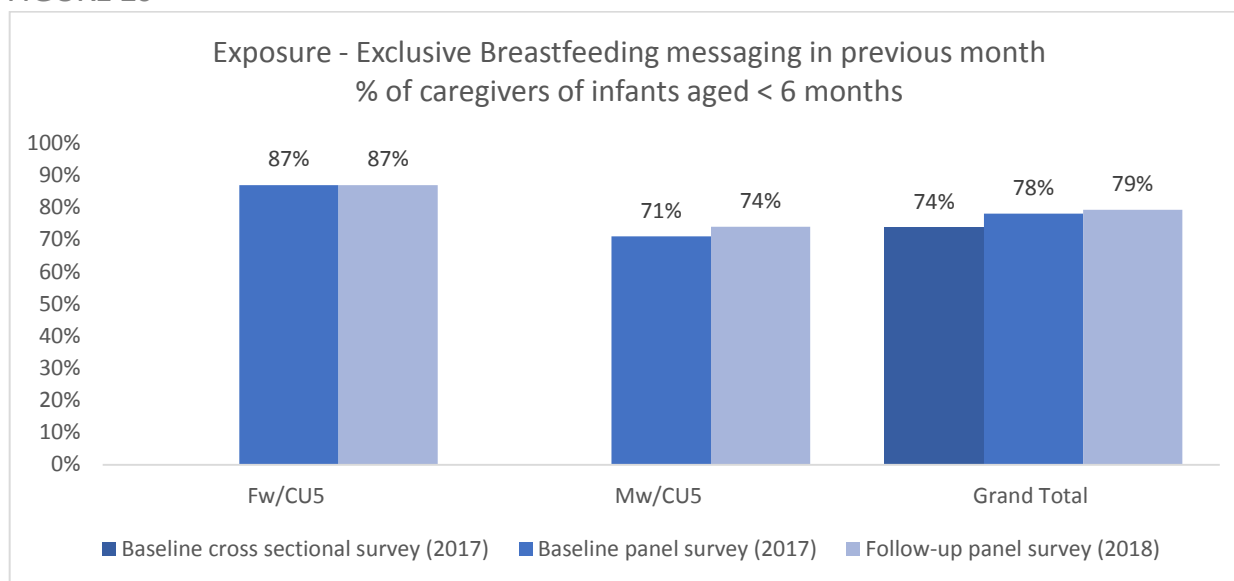


EXPOSURE TO MESSAGES ON NUTRITION

Exposure to messages on exclusive breastfeeding

Exposure to messages on exclusive breastfeeding stayed relatively static from 78% at baseline to 79% at follow up, maintaining gains and surpassing the project target of 70% (Figure 28). F w/CU5 reported relatively higher exposure figures at both baseline and follow-up (87%).

FIGURE 28



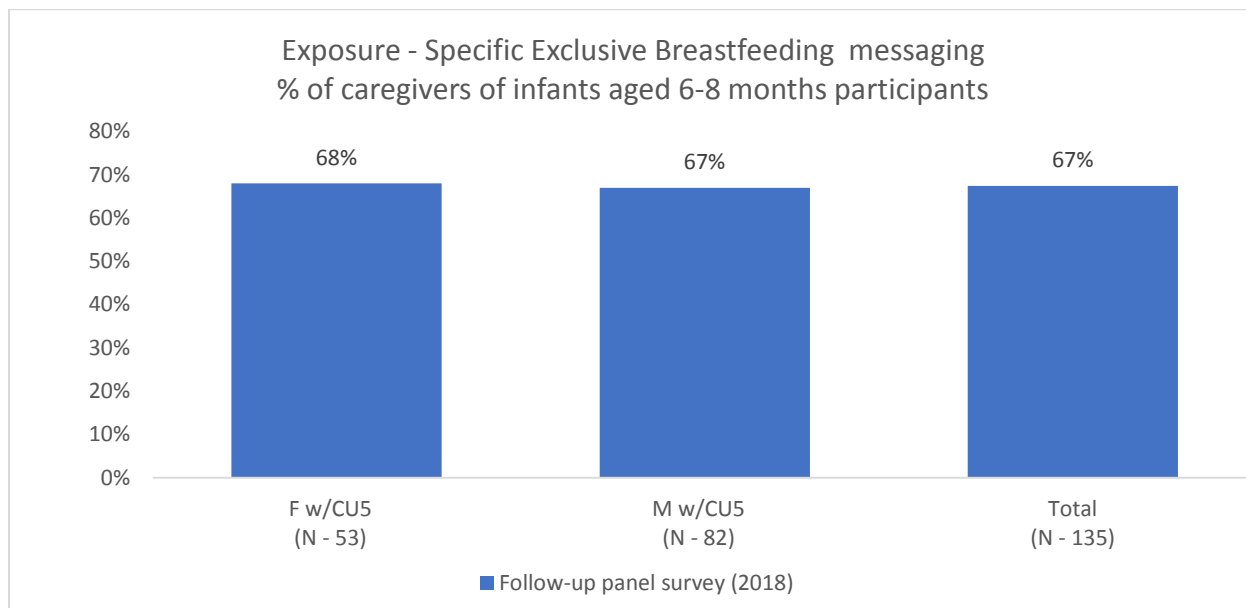
N	Fw/CU5	Mw/CU5	Grand Total
Baseline cross sectional survey (2017)	62	72	134
Baseline panel survey (2017)	15	17	32
Follow-up panel survey (2018)	53	82	135

Methodology Notes

Sample for the Baseline panel survey (2017) is very small thus findings may be overstating exposure. More information required to validate findings.

The question for exposure on the specific message on Exclusive Breastfeeding was asked at follow up study only. There was an overall response of 67% (Figure 29). F w/CU5 reported the highest exposure of 68%. Generally, responses for exposure to the specific exclusive breastfeeding, were 11 percentage points lower than that for 'any message' on breastfeeding in the previous month.

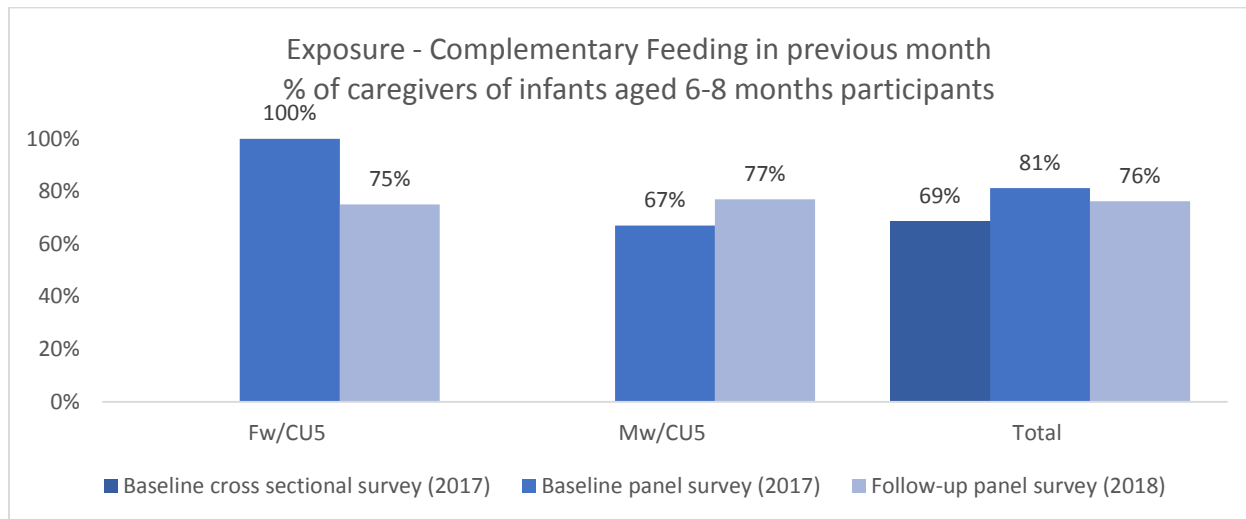
FIGURE 29



Exposure to messages on complementary feeding

Exposure to messages on complementary feeding reduced slightly from 81% at baseline to 76% at follow up (Figure 30). Although reported figures surpass the USAID Communicate for Health target of 70%, further information on the cause or mediators leading to the reduction should be investigated and mitigated.

FIGURE 30



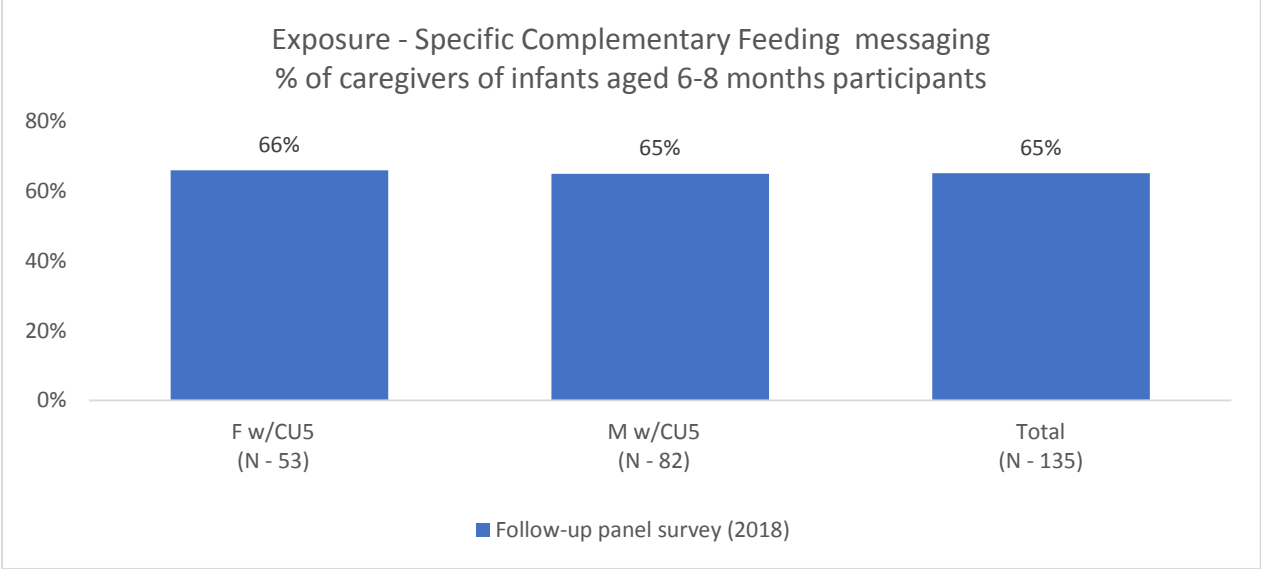
N	Fw/CU5	Mw/CU5	Grand Total
Baseline cross sectional survey (2017)	26	44	70
Baseline panel survey (2017)	7	9	16
Follow-up panel survey (2018)	53	82	135

Methodology Notes

Sample for the Baseline panel survey (2017) is very small thus findings may be overstating exposure. More critique of datapoint is required to get more information on the decrease

The question for exposure on the specific message on Complementary feeding was asked at follow up study only (figure 31). There as an overall response of 65%. F w/CU5 reported the highest exposure of 66%. Generally, responses for exposure to the specific complementary feeding message, were 11 percentage points lower than that for 'any message' in the previous month.

Figure 31



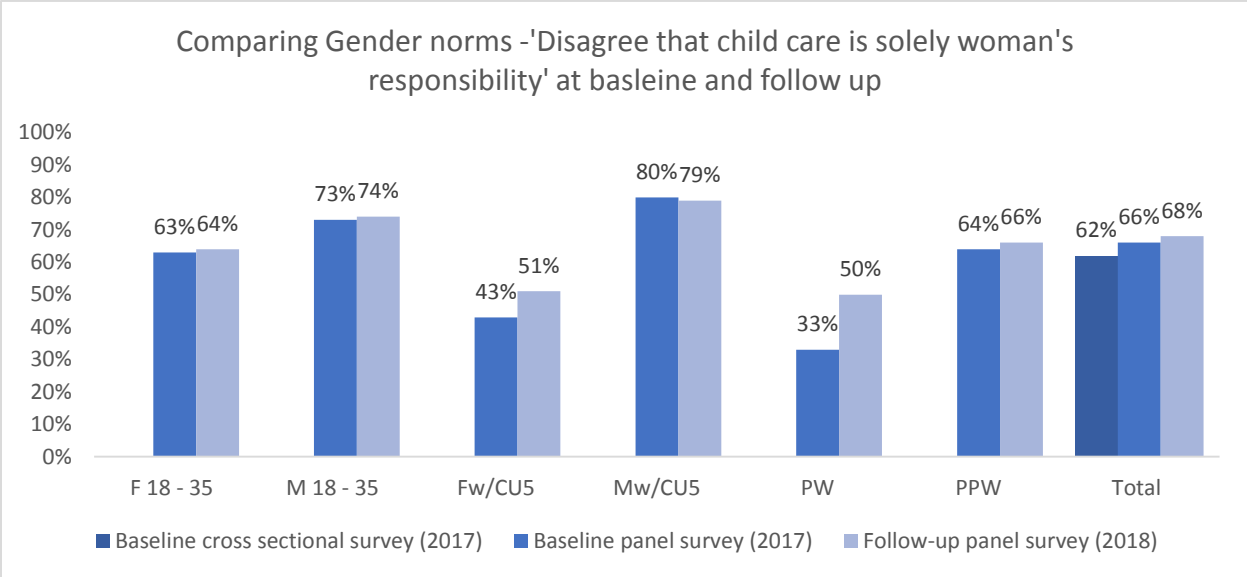
GENDER NORMS

Gender norms were among the key indicators being measured by the study. Questions regarding gender norms were asked of all Life Stage study participants and the following information was collected:

1. Whether respondent agrees that child care is solely a woman’s responsibility
2. Whether respondent agrees that woman is solely responsible for avoiding pregnancy

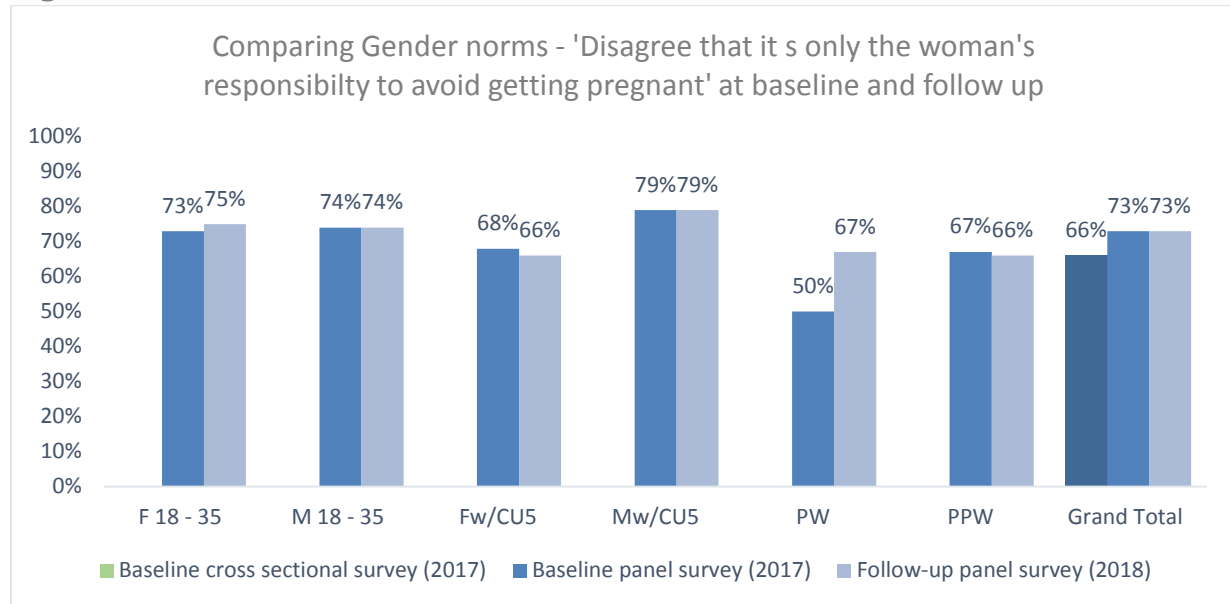
The data trend suggested a marginal change from 66% at baseline to 68% at follow up, amongst the respondents who think childcare is not solely the woman’s responsibility (Figure 32). There was an increase across all life stages except M w/CU5 which was 1 percentage point lower than the baseline responses. Compared to other cohorts, relatively fewer pregnant women (50%) and F w/CU5 (51%) disagreed that childcare is solely the woman’s responsibility at follow up. More men at follow up (66-74%) disagreed that childcare is not the woman’s sole responsibility compared to (50% - 64%) of women.

Figure 32



There was no change in the percentage of respondents who reported that getting pregnant is not only the woman’s responsibility at 73% (Figure 33). The male cohorts disagreed slightly more, averaging 73% compared to 69% for female cohorts. Overall, more women (69%) reported that giving birth is not only the woman’s responsibility at follow up than at baseline (64%).

Figure 33



N	F 18 -35	M 18- 35	FW/CU5	MW/CU5	PW	P/PW	Total
Baseline cross sectional survey (2017)	700	702	209	329	89	221	2250
Baseline panel survey (2017)	241	240	53	82	24	67	707
Follow-up panel survey (2018)	241	240	53	82	24	67	707

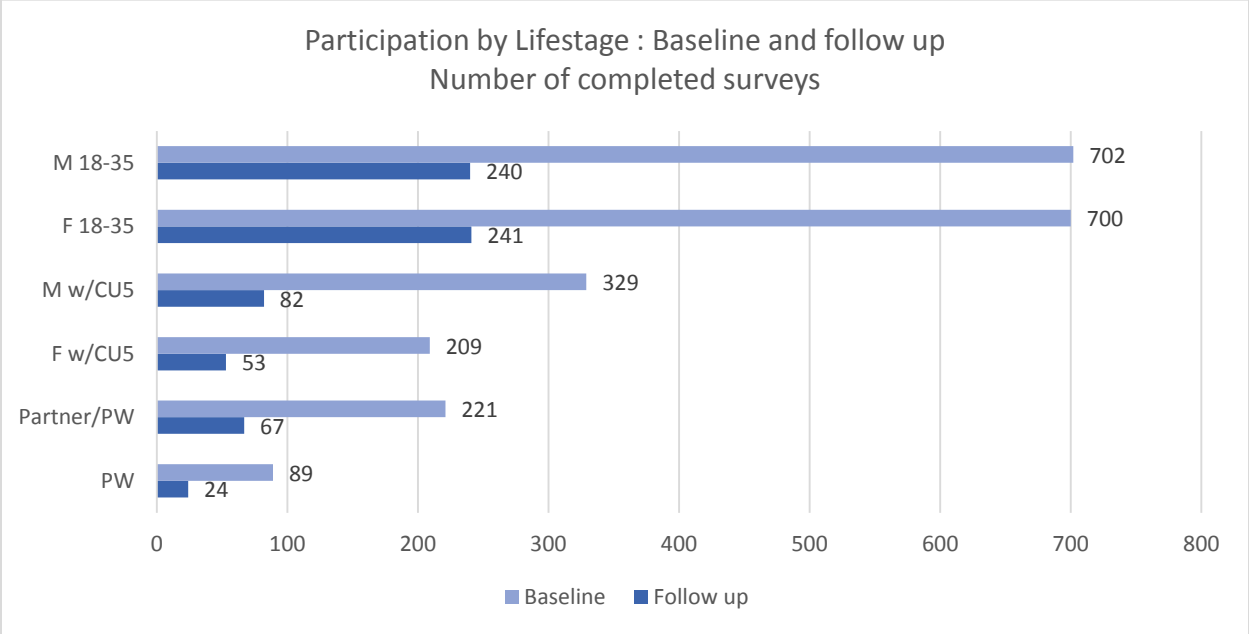
RESPONSE RATES FOR LIFE STAGE STUDY

Overall, the response rate was 31.4%. AAPOR⁽¹⁾ response rate 1). Simply, this represents the percentage of **respondents who consented to participate and then proceeded to complete the full survey**. The calculation for the AAPOR response rate 1 is illustrated in Appendix 2. For the baseline survey the overall response rate for the Life Stage study was 9.3% (AAPOR⁽¹⁾ using response rate 4.

Participant attrition, disinterest to start the survey and survey fatigue due to survey length may have impacted the response rate. The more elusive demographic profiles, Pregnant Couples and Caregivers of Children under age 5, recruited only 91 and 135 participants respectively into the follow up study sample of 707.

For the baseline, the study design called for a target sample of 700 participants in each of six Life Stage cohorts to complete an initial baseline survey plus one follow-up survey after 6 months. However, targets were adjusted once recruitment began and it was apparent that pregnant women/partners and caregivers of children under 5 would be difficult to reach via mobile phone survey. Therefore, the baseline survey was halted after meeting the mandatory recruitment target of 700 females and 700 males in the Youth-Young Adult cohorts. Actual recruitment figures for each cohort group at baseline and follow up are shown in the chart below.

Figure 34



Sample size estimates were established as follows. To detect a 10-point minimum difference (e.g. from 50%-60%) in the indicators of interest (e.g., family planning use) with 90% power for a two-sided comparison (e.g. baseline to six-month follow-up) with 5% significance, 519 completed surveys from each Life Stage are required for Baseline. To account for up to 25% attrition over the follow-up period, we estimated 700 completed interviews would be required at baseline for each Life Stage cohort. As the baseline quotas were not met, this had a consequent effect on the follow up sample. For the follow up sample, attrition was approximately 68.58%, which surpassed the initial estimate of 25% over 6 months. The significantly reduced sample size meant we had insufficient power to conduct statistical tests assessing changes over time and instead we focused on data trends in this report.

Looking at those who completed a follow up survey, the young adults cohort were most likely to complete the follow up (34% response rate), whilst the Caretakers of children under 5 had the lowest

response rate of 25%(Table 5). Pregnant women, who were the most difficult to recruit at baseline, had a response rate of 27% at follow up.

Table 5

Response rate per Life stage	
Life Stage	Response Rates
Female Youth/Young Adult	34%
Male Youth/Young Adult	34%
Pregnant women	27%
Partners of pregnant women	30%
Female Caretakers of children under 5 years	25%
Male Caretakers of Children under 5 years	25%
TOTAL	100%

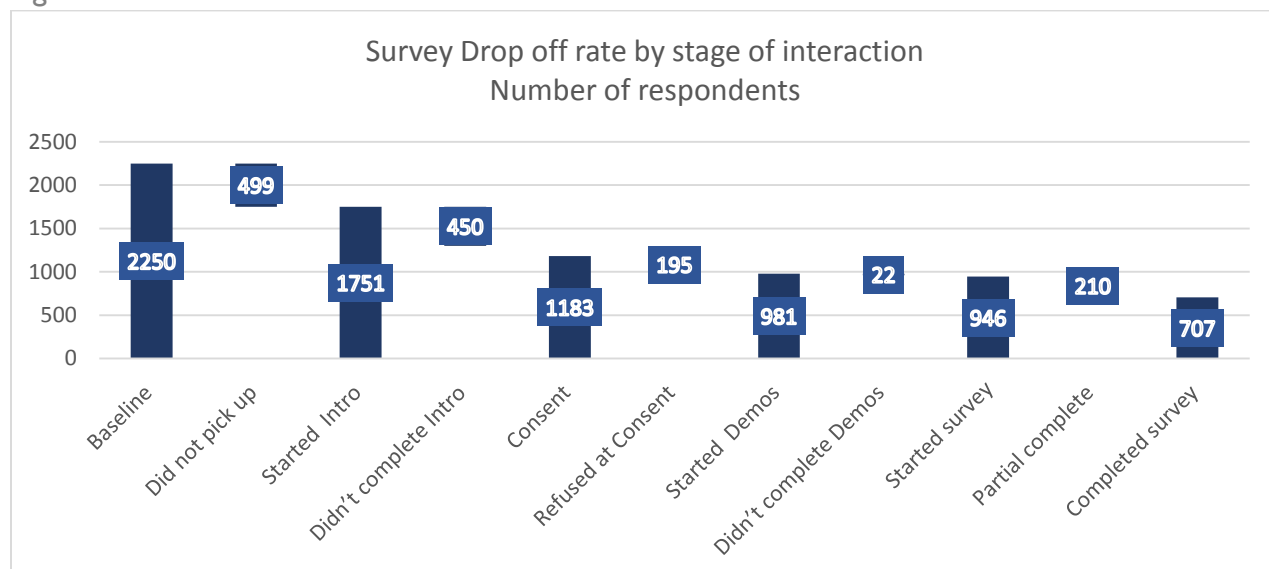
At follow up, it is apparent attrition for the USAID Communicate for Health - IVR survey, over 6 months is around 70%. Response rates for IVR calls at VIAMO range between 10 – 20% ⁽¹⁾ for known numbers. The response rates for the follow up panel survey (2018) using known numbers, exceeds expectations compared to other surveys with known numbers; more so for a longitudinal survey with a relatively longer period of implementation.

Given high rates of attrition, even with relatively high response rates, it would be necessary to recruit an extremely large sample at baseline to compare changes over time to have sufficient power to conduct statistical testing.

SURVEY DROP OFFS

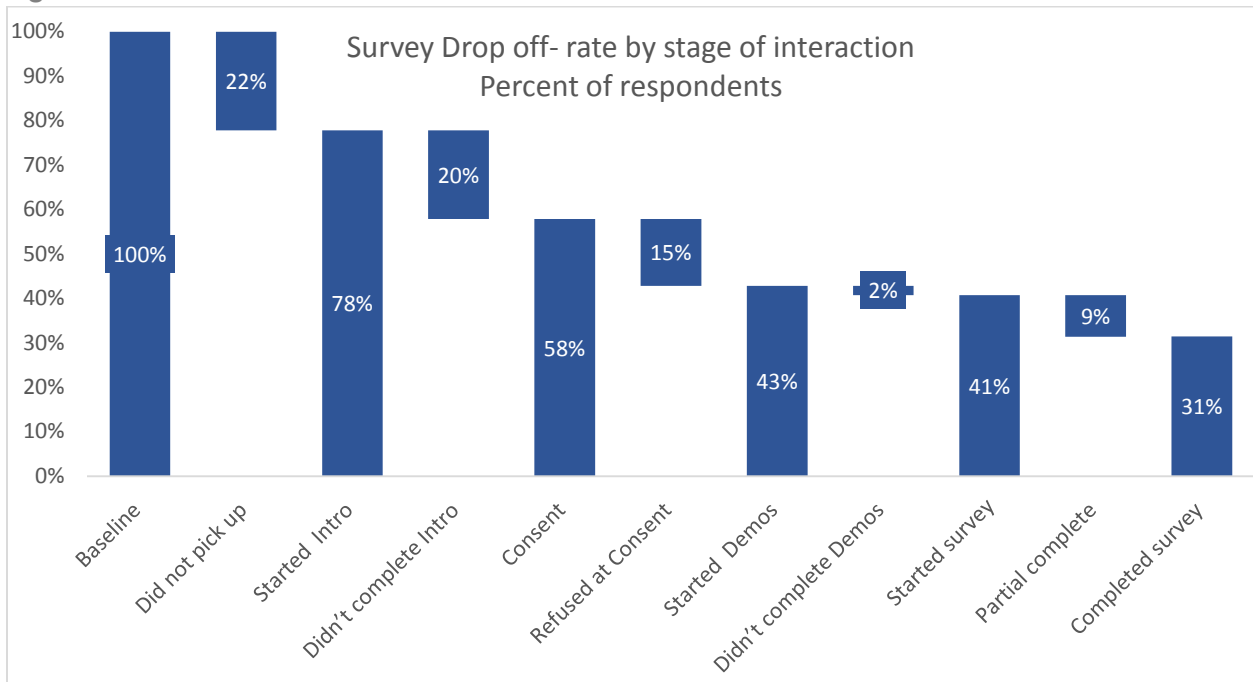
For the follow up panel survey, most refusals were prior to consent: these were respondents who never picked up or dropped off at the introduction of the survey – Figure 35. This is typical for drop-offs for IVR surveys.

Figure 35



⁽¹⁾Response rates for IVR surveys at VIAMO for a survey of a similar magnitude typically range between 10 – 20% for known numbers. The USAID Communicate for Health thus performs above average, although not as strongly as household surveys.

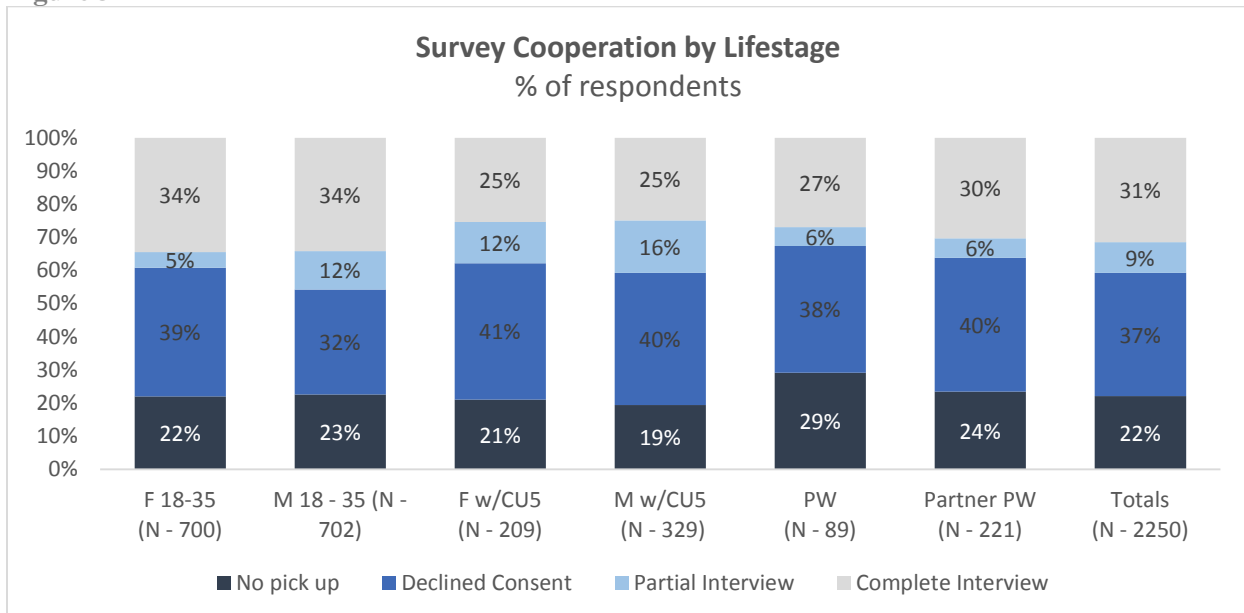
Figure 36



COOPERATION RATES

Cooperation rates reflect the ratio of people fully completing the survey among those eligible to take the survey. The AAPOR(I) cooperation rates were 40.4% and 52.4% respectively for rates 1 & 3 and 2 & 4 respectively. A change of +1 and -0.6% respectively from the baseline survey. The chart below portrays these results visually by denoting the specific point of drop off once a respondent was called at follow up. Average break off after the point of consent was 14% – well less than the benchmark 1% loss per question.

Figure 37



Methodology Note:

- *Break-off before Consent:* Respondents dropped off at the introduction and before reaching the Informed Consent.
- *Declined Consent:* Respondent heard all or part of the Informed Consent and chose not to continue.
- *Partial Interview:* Respondent agreed to participate in the study and dropped off during the substantive questions.
- *Completed Interview:* Respondent answered all questions deemed mandatory for the relevant Life Stage group.

⁽¹⁾ *Response rates were computed according to the American Association of Public Opinion Research (AAPOR) guidelines [http://www.aapor.org/Education-Resources/For-Researchers/Poll-Survey-FAQ/Response-Rates-An-Overview.aspx]. The final dispositions of the mobile phone numbers were classified using AAPOR standard definitions. See Survey Implementation Methodology – Call Outcomes.*

COSTS

The average cost to collect the 707 completed interviews was \$22 per survey costing a total of \$16,238. Compared to baseline, completed interviews cost \$15 per survey resulting in a total of \$32,565. This figure for follow up includes setup costs for the finalized survey instrument (language translations, audio recordings, labor to setup the IVR survey), data collection costs for survey (mobile airtime, airtime incentives for female participants, labor to execute the survey) and project costs for post-collection data analysis. For the 1751 participants who were reached over the duration of the survey, the average cost per respondent is about \$9. Participants were reached several times and some provided incomplete responses to the survey.

IMPACT OF PARTICIPANT INCENTIVES

The question of whether to offer participant incentives, and if so, in what amount, often arises during survey design. Anticipating challenges reaching and retaining female participants into the Life Stage study based on results from previous mobile surveys, the USAID Communicate for Health team offered a 5 GHS or USD 1.3 airtime incentive to females who fully completed the survey. To encourage participation in the follow up survey the incentive was offered for each survey completed. This offer was communicated at the time that informed consent was obtained.

Incentives for participants seems to have produced minimal effects on the female cohorts (PW and F w/CU5), as response rates remained relatively low. However, non-provision of incentives may have resulted in fewer completions. For future surveys the incentive can be doubled and the effect measured. We recommend that incentives be kept for pregnant women and female caregivers of children under 5 but not for any other group.

CONCLUSION AND RECOMMENDATIONS

Increasing Response Rates

Minimizing sample attrition is important for establishing high external and internal validity. A larger sample of respondents can be recruited during the baseline survey, if a follow up survey is to be conducted. Alternatively, a repeat cross-sectional approach can be adopted rather than the longitudinal survey approach. Following above-the-line messaging, a stand-alone survey can be fielded to gauge exposure, behaviors and behavioral determinants of the focus regions and Ghanaian population at large. Attrition rates from baseline to follow up suggest that additional strategies to keep respondents engaged or alternate study design like a cross sectional survey at varying time points may be more feasible as opposed to a longitudinal survey.

Participants details should be updated periodically for those whose circumstances have changed. Updating phone numbers can be done via a dedicated hotline number or during monthly reminders. Project coordinators can also reach out periodically to respondents to update their details and sensitize them on the next round of surveys. Hunt and White (1998) posit that to minimize attrition, participants who have dropped out should be contacted to collect primary outcomes and/or to get them to rejoin the study. Participants who drop out can be interviewed by phone to collect data on primary behaviors / outcomes.

For phone surveys, most refusals occur during the introduction (Hunt and White, 1998). This was also apparent for the baseline survey. There is the need to carefully craft the wording and any other relevant information about the purpose of the call and study and importance (social and personal) of their contribution (Dillman, 1978).

To increase response rates, respondents who drop off after completing up to 25% of questions can be prioritized as they have a higher tendency to complete surveys compared to respondents who drop-off at the introduction. Additionally, alternative strategies like calling them with live agents and negotiating the time of call can be employed. When respondents were called at pre-agreed times, completion rates exceeded 80%. Going forward survey times should be agreed with respondents. This can be embedded in the baseline survey and reminder messages. The times participants picked up and completed the baseline survey can also be used to determine the time for future calls.

The follow up survey should be deployed not more than 6 months after follow up to reduce the attrition rates due to lost or changed contacts and general interest in answering the survey. A longer lapse of up to 9 months may result in respondents moving into different life stages and questions and responses not being valid. Further research on reasons for refusing to participate in the survey and feedback on the entire survey should be conducted and findings used to iterate the methods for future surveys.

Where possible, reduce the number of survey questions to increase the number of completed surveys. As noted earlier in this report, roughly 1% of respondents are likely to break off at each question. Design can explore participants only answering questions under 2 to 3 thematic areas. In the current survey, participants respond to between 30 to 37 questions and spend about 12 – 17 minutes depending on the cohort. Limiting the survey questions to 3 thematic areas will reduce length of questions by up to 60%. Exposure questions can also be limited to specific GLLIW content as opposed to recall of any message on the various thematic areas (family planning, Malaria etc.) and GLLIW messaging. Another option is to field questions on key indicators (15-20, including demographics to a larger sample to increase robustness of survey and allow for more detailed analysis.

Communicate for Health Program

For most of the program areas, the data reports overwhelming improvements in suggestive trends in exposure to messages and determinants. Achievement of all thematic areas surpass the USAID Communicate for Health target of 70%. This is in line with the Communicate for Health program expectations in the short term. As expected, reported behaviours did not increase as much as exposure and behavioural determinants mainly because changes in reported behaviours requires more time, in addition to an enabling environment for behaviour change that includes access and quality in the delivery of health services. This is further illustrated by the Socio-ecological model that posits that multiple layers of interactions and environmental factors from interpersonal, individual, community, policy etc. influence behaviour change. *Future messaging must take this into account and focus on driving the behavior adoption, not just raising awareness.*

For all behaviors and behavioral determinants, multiple mediators are responsible for behavior change. For behaviors and determinants that remain below the USAID Communicate for Health targets, further research must be conducted to understand barriers in practicing the behavior. Wakefield et al., (2010) explain that concurrent availability of and access to key services and products are crucial to persuade individuals motivated by media messages to act on them. The creation of policies that support opportunities to change provides additional motivation for change, whereas policy enforcement can discourage unhealthy or unsafe behaviors. They add that various challenges to the success of mass media campaigns exist, including the power of social norms.

The trends show improvements in awareness and interpersonal communication, which can be expected to convert into changes in intentions and behaviors with more time and more attention to issues of access and quality in the delivery of health care and behavioral supports such as bed nets, soap, condoms, etc. For the final cross-sectional survey, it is expected that exposure, behavioural determinants and ultimately reported behaviours will improve considerably as learnings from this survey and programming informs iterations and implementation. This however will be dependent on improvements to social mobilization, access and quality of care. The USAID Communicate for Health project is on track to achieve targets whilst blazing the trail of cutting-edge technology in using IVR to collect robust public health data.

Mobile Phone M&E

Although Mobile phone surveys show great promise, the methodology has illustrated the strengths and opportunities albeit with some limitations.

Recruitment of specific cohorts is challenging. It must be noted that household surveys do experience similar challenges although with a lessor magnitude. Recruitment of hard to reach cohorts such as the Pregnant women and Partners of Pregnant Women present a daunting task and as such future mobile phone surveys must attempt to bridge this gap. Other methods of accessing these life stages may be needed to produce sufficient sample sizes for M&E analyses.

With regards to cost and duration, the baseline and follow up surveys have proven to be less costly and faster to implement than a traditional household survey, further strengthening the case for alternate M&E methods especially in the context of cutbacks to health budgets and austerity measures.

Additionally, mobile phone data collection allows real-time monitoring to quickly influence the design and distribution of behavior change communication programming by reducing time lag between data collection and integration of results into programming.

Consideration should be given to dynamic or fluid life stages to account for changes over time. For instance, some respondents may move from Young adults to Caregivers or pregnant couples. Although they would answer the same questions at baseline, their circumstances may have changed, and questions may no longer be relevant.

Consider eliminating incentives for the F 18-35 cohort as this cohort was easy to recruit. However, participant incentives may be a useful tool for encouraging completion for longer surveys, and the offer should be communicated to eligible participants at an early point in the survey.

SURVEY IMPLEMENTATION METHODOLOGY

This survey is designed and fielded by a joint research team comprised of representatives from USAID Communicate for Health, FHI 360, Ghana Health Service Health, Family Health Division/Promotion Department, the University of San Francisco and Viamo.

Data collection took place from December 1 2017 – February 04, 2018.

INTERACTIVE VOICE RESPONSE

The survey is fielded using Interactive Voice Response (IVR) technology. This technology uses prerecorded audio files to present the survey questions and users indicate their responses by pressing digit(s) on their phone's keypad. The digits are transmitted as key presses using a long-standing telecommunication signaling technology (DTMF, also known as touch tone) to the VIAMO platform which then records the question response associated with the digit pressed. IVR technology supports any combination of the ten digits (0-9) as a response to a given question, most frequently this is applied as multiple-choice options (e.g., for female press 1, for male press 2) but can also be used for numeric questions (e.g., enter your age).

Although IVR technology also supports recording a user's spoken voice (as in capturing a voicemail message) and numeric input (e.g., enter your age in years), these input methods can result in higher drop off rates and lower quality of information. Based on previous surveys, both formal and informal, the project team chose to present all baseline survey questions in a multiple-choice format only.

LANGUAGE AND TRANSLATION

As noted above, IVR technology uses prerecorded audios to communicate questions and the response choices to the respondent. These audios may be recorded in any language desired. For the fielding of this survey, it was determined that five languages would be supported: English, Twi (a dialect widely spoken in Ghana) and three other local dialects, Ewe, Dagbani, and Ga. These languages were selected based on the major ethnicities represented in the USAID Communicate for Health focal regions and language preferences selected during the USAID Communicate for Health 2016 Cross-Section (Wave 1) survey in the same regions and the baseline survey.

The survey instrument itself underwent several design iterations including adjustments to enhance the presentation via a mobile phone. The final version was translated into the local dialects by native speakers of each language. Translations were subsequently verified independently, and adjustments incorporated into the audio recordings. For each language, the audio recordings were made by the person who participated in translation of the survey instrument, thus ensuring full familiarity with the survey phrasing. It should also be noted that female voice talents were utilized for all languages.

Recordings from the baseline survey were used with the addition of new content for the follow up. Specific audio bytes were embedded with the audio recordings

DIALING BASELINE SAMPLE OF 2,250

Following the baseline survey, monthly reminder messages (voice and SMS) were sent to all participants, based on preference during the baseline survey. For the follow-up survey numbers totaling 2,250 representing those who had completed the baseline survey were dialed over a period of 9 weeks.

An advance SMS was sent to all 2,250 subscribers 24 hours before launch of the survey, alerting them of the follow up survey and encouraging them to participate. For the first day of dialing, all subscriber phone numbers were dialed three times in succession, twenty minutes apart over an hour, between 5:00 pm and 8:00 pm.

On the next day, all subscribers who failed to answer their phones as well as those who were unable to complete the survey were dialed again using the same retry pattern:

- Saturday 2 PM – 5 PM
- Sunday 2 PM – 5 PM

The second round of dialing was preceded by an advance SMS to participants who did not complete the call or answer the call in the first round. The SMS informed them of the time of the next call and the number to call back on to take the survey if the call is missed.

The second round of dialing started 48 hours after the advance SMS was sent, calls were sent between Friday and Sunday as follows:

- Friday 5 PM – 8 PM (dialing every number once)
- Saturday 2 PM – 5 PM (dialing every number once)
- Sunday 2 PM – 5 PM (dialing every number once)

The third and final round of calls was preceded by an advance SMS to participants who did not complete or answer the call in the second-round survey, also VIAMO call center agents followed up with calls to participants in this group to inform them about the survey and get information on best time of call for these participants.

The final round of calls and advance SMS were sent as follows:

- Wednesday Call center agents placed follow up calls to participants who had not completed or answered their phones after second round of dialing
- Thursday Advance SMS to participants who had not completed or answered their phones after second round of dialing
- Friday 5 PM – 8 PM (dialing every number once)
- Saturday 2 PM – 5 PM (dialing every number once)
- Sunday 2 PM – 5 PM (dialing every number once)

Participants who missed the call or who were unable/unwilling to complete the survey at the time of the call were able to call back using their phone's missed call or redial feature to take the survey at a convenient time (24x7). With VIAMO's flash-and-call-back feature, when a user calls back the platform plays a brief tone, disconnects the call and then immediately calls back so the user does not incur airtime cost.

SURVEY DESIGN AND DATA COLLECTION

The VIAMO platform supports complex branching logic that allows a survey to be tailored based on a respondent's answers to one or more questions. All the participants in the follow-up are considered eligible based on their responses at baseline.

As a result, the number of questions comprising a completed survey varied from 30 - 37 questions depending life stage cohort assignment. All questions and responses were presented in the same order for all respondents within an eligibility group.

	<u>Number of Questions</u>	<u>Average Completion (min)</u>
Youth-Young Adult cohort	34-37	12:21
Caregiver cohort	35-37	16:62
Pregnant / Pregnant Partner cohort	30-31	13:26

LANGUAGE SELECTION: Every participant in the follow up survey had an assigned language, English, Twi, Ga, Ewe and Dagbani based on their language choice at baseline. The language selector was not repeated in the follow up survey.

SURVEY INTRODUCTION & CONSENT TO START: The survey began with an introduction message that required users to confirm if they took part in the baseline survey, by pressing 1 ("press 1") to start the survey. If a participant said they did not take part in the baseline survey or they were not sure of their baseline participation, they received another question asking them to confirm if they did take part in the baseline survey, after two refusals the participant is dropped from the survey.

Call back instructions were also provided in case users were not willing/able to complete the survey at that time.

DEMOGRAPHIC QUESTIONS: Users then answered a series of 8 - 10 demographic questions

Life Stage Group

All participants maintained their assigned life stage from baseline and were asked questions based on their assigned life stage namely;

1. Pregnant woman
2. Female caregiver of child under the age of 5
3. Female between ages of 18-35
4. Male partner of a pregnant woman
5. Male caregiver of child under the age of 5
6. Male between ages of 18-35

Demographic questions were asked of all participants. However, demographics at baseline were used lock participants into Cohorts. In instances where participants reported varying demographics, this was noted however baseline responses were still used. Some participants reported varying demographics at Follow up compared to Baseline.

CONSENT TO PARTICIPATE: Respondents eligible for a Life Stage group were advised as to the nature of the study and were explicitly asked for their consent to participate. This consent, and the entire study protocol, has been reviewed and approved by the Ghana Ethical Review Committee for health research and FHI 360's internal research review board.

SUBSTANTIVE QUESTIONS: Respondents who consented to participate in the Life Stage study were then presented with further questions on a variety of topics, and their responses comprise the baseline behaviors and behavioral determinants:

1. Youth-Young Adults (ages 18-35)
 - Handwashing
 - Condom use
 - Family planning
 - Gender norms
2. Caregivers of child(ren) under the age of 5
 - Facility delivery
 - Handwashing
 - Family planning
 - Infant nutrition (child < age 9 months)
 - Gender norms
3. Pregnant Women/Partners of Pregnant Women
 - Facility delivery
 - Handwashing
 - Family planning
 - Malaria
 - Gender norms

Note: All respondents received questions on exposure to Yolo messaging and specific exposure questions

SURVEY CONCLUSION: The survey concluded with all respondents, regardless of whether they were presented with substantive questions, being thanked for their participation and soliciting their consent to receive future surveys.

INCENTIVES

Results from prior surveys in Ghana indicated that females, and in particular females living in rural areas, were more difficult to reach via mobile phone. Given that 50% of the target sample is female, the USAID Communicate for Health team offered a 5 GHS airtime incentive to females who fully completed the survey. The offer was communicated at the point of formal consent to participate in the Life Stage study and informed the participant that the airtime would be awarded for completing the follow up survey. This approach was approved by the Ghana Health Service Ethics Review Committee. All airtime awards were transferred to qualifying participants within 1 week after survey completion.

SURVEY RESPONSES PER PHONE NUMBER

The ability for a user to call back to take the survey allowed for multiple calls per phone number: the original outbound call and (optionally) one or more call backs. This required careful inspection of the results to select the “best” response from a given phone number such that exactly one response remained in the sample for each phone number:

- In cases where multiple surveys were submitted for a given phone number, the *most complete response* was included in the results. It should be noted that the most complete response may have been a partially completed survey.
- In cases where multiple surveys from a given phone number reached the same completion point, the *latest response* to reach that point is included in the results.
- If a user (phone number) called back the survey was presented again in its entirety. Users who had fully completed the survey on a previous call were not permitted to start the survey again.

To ensure complete accuracy in formulating the final set of survey results, all call records were encoded with one of 10 AAPOR call disposition values. A simple Excel formula was used to identify the best response per phone number based on the call disposition value according to the criteria outlined above.

CALL OUTCOMES

Due to complex branching within the survey a total of 10 possible call outcomes were possible (see chart below). The most important definitions, which have the greatest impact on response rate calculations, are as follows:

- Completed Interview – Answered the last substantive question, Gender Norms IR1.5.2. (Ref #11)
- Partial Interview – Consented to participate in the Life Stage longitudinal study (questions IC.x) but dropped off before answering the final substantive question. (Ref #10)

The USAID Communicate for Health Mobile Cohort mapping of call outcomes to AAPOR codes

Ref	BEST outcome per unique phone number (assume multiple calls and/or callbacks); LAST outcome if tied.	AAPOR Category	AAPOR Code
0	Call did not dial - (1) technical error at mobile network operator level as never placed a call to a handset. Receive a technical error to assign this code.	N/A. Exclude entirely from sample. Calls were never dialed.	N/A
1	No pickup (Introduction did not play) - call dialed, but nobody picked up phone. We know this, and introduction never played. Don't know if unanswered because (1) was not a valid number or (2) person was not in network range or (3) phone was off. No contact was made with live person.	Category 2 - Eligible Non-Respondent	2.2
2	No selection or invalid selection at Intro. Call connected but no valid selection was made when Intro was played. So we know this is a valid phone number, but we don't know if the call connected at the network level but did not ring at the person's handset, or it went to voicemail, or it was picked up and hung up immediately.	Category 2 - Eligible Non-Respondent	2.1
3	Valid choice made at Introduction; No Answer or Decline at Intro Msg ("continue"). First point at which we know that a person picked up the phone, Listened to Intro but then declined to "continue" or hung up..	Category 2 - Eligible Non-Respondent	2.11
8	Reached final demography questions	Category 2 - Eligible Non-Respondent	2.12
9.1	Reached Consent but = unanswered	Category 2 - Eligible Non-Respondent	2.113
9.2	Reached Consent = Decline.	Category 2 - Eligible Non-Respondent	2.112
9.3	Reached Consent = Agree – drop-off at 1st Q after Consent	Category 2 - Eligible Non-Respondent	2.12
10	Reached Consent = Agree – answer all exposure and at least 1 behavior Q but drop-off before responding to IR1.5.2	Category 1 - Interview	1.2
11	Eligible – Consent = Agree – respond to IR1.5.2. (May or may not have answered final question on format of reminders).	Category 1 - Interview	1.1

AAPOR RESPONSE RATES

Call outcomes and rates for the USAID Communicate for Health interactive voice response, random digit dial sample using American Association for Public Opinion Research standards:

a	
Complete (1.1)	707
Partial (1.2)	210
Eligible, non-interview (Category 2)	
Refusal and Breakoff (2.100) (#2)	303
Refusal (2.112) (#3)	147
Known respondent (explicit) refusal (#3)	107
Implicit refusal (2.113) (#9.1 #9.2 #9.3)	229
Break off/Implicit refusal (#8)	48
Non-Contact	499
Unknown eligibility, non-interview (Category 3)	
No screener completed (3.21) (Ref #6)	0
Unknown if person is HH resident (3.3) (Ref #6)	0
Not eligible (Category 4)	
Unknown if number is valid, call did not connect (4.31) (#0)	
No eligible respondent (4.70) (#4.1 + #4.2 + #7.2)	0
Quota filled (4.80) (#7.1)	0
Other (Call connected but no/invalid selection) (4.90) (#2)	
Total phone numbers used	2250
I=Complete interviews (1.1)	707
P=Partial interviews (1.2)	210
R=Refusal and break-off (2.1)	834
NC=Non contact (2.2)	499
O=Other (2.0, 2.3)	0
Calculating e: ^A	1.000
UH=Unknown household (3.1)	0
UO=Unknown other (3.2-3.9)	0
Response Rates	
Response rate 1: $I/(I+P) + (R+NC+O) + (UH + OU)$	0.314
Response rate 2: $(I+P)/(I+P) + (R+NC+O) + (UH+OH)$	0.408
Response rate 3: $I/((I+P) + (R+NC+O) + e(UH+UO))$	0.314
Response rate 4: $(I+P)/((I+P) + (R+NC+O) + e(UH+UO))$	0.408
Cooperation Rates	
Cooperation rate 1 [&3]: $I/(I+P)+R+O$	0.404
Cooperation rate 2 [&4]: $(I+P)/((I+P)+R+O)$	0.524
Refusal Rates	
Refusal rate 1: $R/((I+P)+(R+NC+O) + UH + UO)$	0.371
Refusal rate 2: $R/((I+P)+(R+NC+O) + e(UH + UO))$	0.371
Refusal rate 3: $R/((I+P)+(R+NC+O))$	0.371
Contact Rates	
Contact rate 1: $(I+P)+R+O / (I+P)+R+O+NC+ (UH + UO)$	0.778
Contact rate 2: $(I+P)+R+O / (I+P)+R+O+NC + e(UH+UO)$	0.778
Contact rate 3: $(I+P)+R+O / (I+P)+R+O+NC$	0.778
Survey length, costs, and productivity	

Average survey length (mins)	14:03
Average cost per interview	GHS 35
Telephone calls used to get a survey start	3.24
Telephone calls used to get a full (complete) interview	22.7

(A) *e* is estimated as the proportion of all respondents screened for eligibility who were eligible. We have chosen to calculate ‘*e*’ as the proportion of all callers screened who were known eligible for the national sample; this computation yielded a value of ‘*e*’ that was more conservative than the AAPOR-calculated rate. However, this computation and application of ‘*e*’ may change in future reporting as additional data and expertise are obtained.

AAPOR Computation

AAPOR codes for follow up was assigned based on the assumption that every respondent who did not complete a survey was a known and Eligible, non-interview (Category 2). Category 3 (Unknown eligibility), Category 4 (Not eligible) were thus not relevant in assigning dispositions. Consequently, computations for response rates were higher compared to the baseline survey. Additionally, calculating e^A was 1 in follow up compared to 0.888 in baseline. Since the position of the introductions and consent questions varied from baseline, the AAPOR codes for follow up survey were different from the baseline survey.

APPENDIX

Appendix 1- Baseline sample – Age of respondents

Age groups /Life stage	Fw/CU5	F 18 - 35	Mw/CU5	M 18 – 35	P/PW	PW	Grand Total
18-24	100	492	89	494	119	54	1348
25-35	90	208	148	208	72	29	755
36-49	11	0	70	0	20	5	106
Over 50	8	0	22	0	10	1	41
Grand Total	209	700	329	702	221	89	2250

Appendix 2 - AAPOR response rate computation

- RR** =Response rate
- COOP**=Cooperation rate
- REF** =Refusal rate
- CON** =Contact rate
- I** =Complete interview (1.1)
- P** =Partial interview (1.2)
- R** =Refusal and break-off (2.10)
- NC** =Non-contact (2.20)
- O** =Other (2.30)
- UH** =Unknown if household/occupied HU (3.10)
- UO** =Unknown, other (3.20, 3.30, 3.40, 3.90)
- e** =Estimated proportion of cases of unknown eligibility that are eligible

Response rates

$$RR1 = \frac{I}{(I + P) + (R + NC + O) + (UH + UO)}$$

Response Rate 1 (RR1), or the minimum response rate, is the number of complete interviews divided by the number of interviews (complete plus partial) plus the number of non-interviews (refusal and break-off plus non-contacts plus others) plus all cases of unknown eligibility (unknown if housing unit, plus unknown, other).

$$RR2 = \frac{(I + P)}{(I + P) + (R + NC + O) + (UH + UO)}$$

Response Rate 2 (RR2) counts partial interviews as respondents.

$$RR3 = \frac{(I + P)}{(I + P) + (R + NC + O) + e(UH + UO)}$$

Response Rate 3 (RR3) estimates what proportion of cases of unknown eligibility is actually eligible. In estimating e, one must be guided by the best available scientific information on what share eligible cases make up among the unknown cases and one must not select a proportion in order to boost the response rate.³⁸ The basis for the estimate must be explicitly stated and detailed. It may consist of separate estimates (Estimate 1, Estimate 2) for the sub-components of unknowns (3.10 and 3.20) and/or a range of estimators based of differing procedures. In each case, the basis of all estimates must be indicated.³⁹

$$RR4 = \frac{(I + P)}{(I + P) + (R + NC + O) + e(UH + UO)}$$

Response Rate 4 (RR4) allocates cases of unknown eligibility as in RR3, but also includes partial interviews as respondents as in RR2.

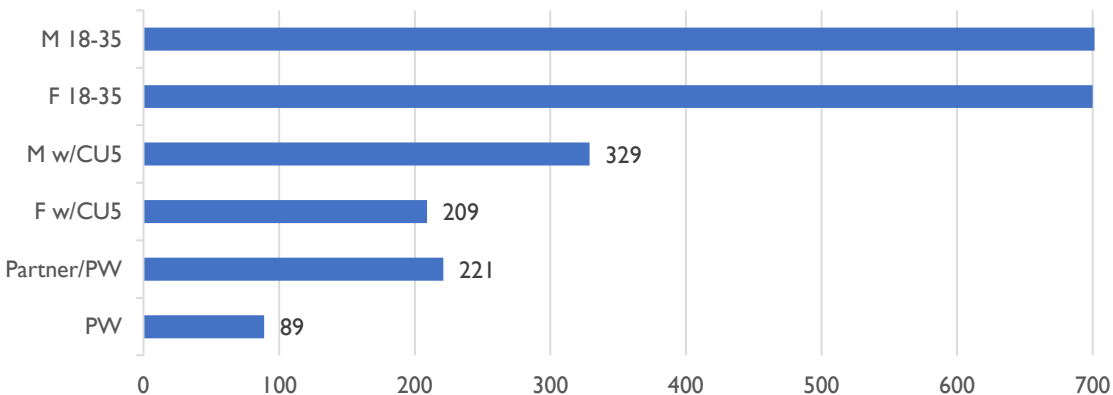
$$RR5 = \frac{I}{(I + P) + (R + NC + O)}$$

$$RR6 = \frac{(I + P)}{(I + P) + (R + NC + O)}$$

Appendix 3 – Baseline results

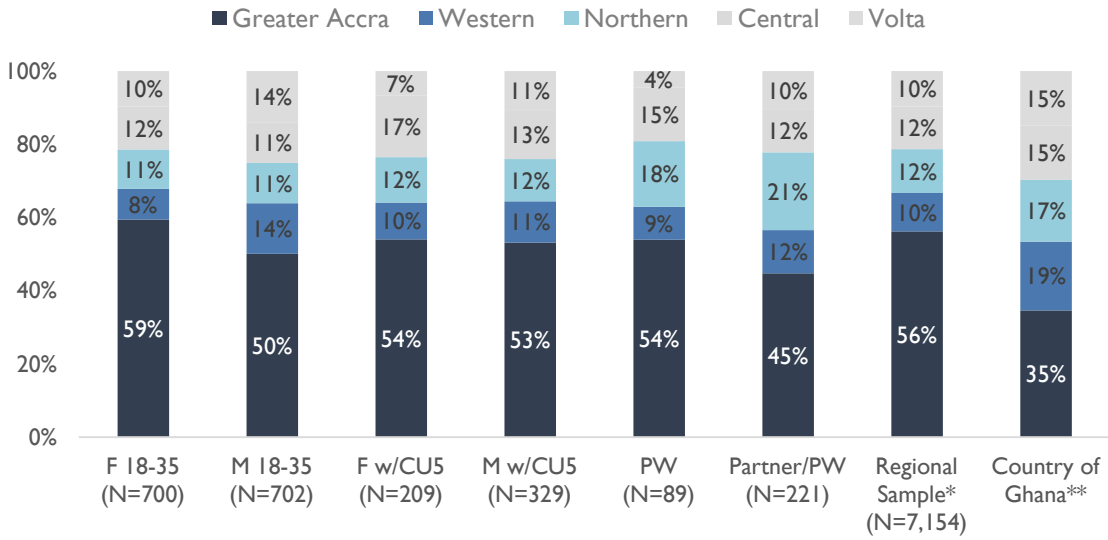
Participation by Life Stage cohort Number of completed surveys

(Cohort target sample size = 700)



Cohort Demographics - Region

% of study participants



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